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J.L. Azad

Changing Complexion of Higher Education

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Changing Complexion of Higher Education

A Study of the Impact of Emerging Socio-Economic Configuration

J.L. Azad*

There have been cataclysmic changes in the socio-economic and political systems of the countries inhabiting the globe during the second half of the twentieth century. The extinction of the British Raj, which had held sway over the vast expanse of countries of Asian and African continents, ushered in an era of political emancipation for these countries. The demise of imperialism however, conceded with a relentless struggle for world supremacy between two super powers with diametrically opposed political systems. The world was a mute witness to the ever increasing possibility of a self annihilating conflagration, which could be triggered off by accident or design at any time.

The sudden collapse of the once invincible communist system has, however, led to the introduction of a unipolar system of polity under which the only super power, backed by an aweful military machine has assumed the role of the world's gendarme, with an unchallenged capability to determine the course of events in the world.

As a natural corollary of this socio-political upheaval, there has been tremendous boost to the capitalist system of economy. The countries who, till the other day, were swearing by the socialist pattern of economy have suddenly discovered merits in the capitalist system. They have opted for free trade and allowed the aggressive incursions of the foreign multinationals to make inroads into their hitherto well guarded economic preserves. The revolution in information technology also has played an important role in bringing the various countries together, thus making the world a global village.

In India also, socialism, (subsequently, the socialistic pattern) which was the sheet anchor of the economic system has given way to free economy. This has resulted in bringing about far reaching structural modifications in the country's economy. It has been, somewhat belatedly, discovered that the public sector enterprises (PSEs) which were once considered as the bulwark of our economic development have become slow moving giants, which must be eased out in case they do not improve their performance. The New Economic Policy, launched in the early nineties is based on a regime of liberalisation, decontrol, decentralisation and foreign equity participation. One important feature of the new economic system is the 'exit' policy, under which the uneconomic PSEs are to be gradually phased out. Another element is that the private sector, which was the *bete noire* under the earlier economic formulation has acquired an aura of respectability and has been assigned an important role in the process of socio-economic development.

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Implications For Education

The policy of decontrol and decentralisation has led to serious thinking about the role of the government in the financing and administration of education, as also of higher education. It has been argued that the government has direct responsibility only for the promotion of basic education to children till they attain the age of 14 as indicated in Article 45 of the Directive Principles of State Policy. So far as post-elementary education is concerned, the government has no constitutional responsibility and hence it could as well be left to the private enterprise. This thinking has found active support from the policy framework laid down by the international agencies like the World Bank and the UNESCO, whose 'advice' is listened to with rapt attention by the denizens of the corridors of power.

The situation has been compounded by the resource crisis that has overtaken the educational sector in general and higher education in particular. By intention or design, the government is feeling shy of making any sizeable investments in higher education. For example, during the first plan, 22 per cent of the plan outlay for education was earmarked for higher education (including technical education). The percentage rose to 38 during the fourth plan. This was, however, the zenith, whereafter there has been a steep decline. In the sixth plan, the outlays plummeted to about 33 per cent. The seventh and eighth plans were more forthright in that no specific outlays were provided for higher education. (It is estimated that the outlays on higher education in the seventh and eighth plans would be about 30 and 25 per cent respectively of the total amounts provided for education.) The message that was sought to be conveyed was that the government was unwilling to provide outlays commensurate with the ever-increasing needs of higher education and that the sector should fend for itself. Considered from the point of view of fiscal investment, higher education has become a peripheral sector.

Alternative Strategies

In the backdrop of the preceding analysis, it would be necessary to work out alternative strategies to meet the crisis that is staring the university institutions in the face. Let us start with an extreme formulation under which the government washes its hands of financing and administration of higher education and leaves the field to the free play of private bodies. These bodies are allowed to establish, finance and manage higher education in the manner they consider appropriate. The government would, however exercise, some control over standards through a policy of accreditation. The government may also keep a vigil over the private bodies so that they may not indulge in activities prejudicial to the larger interests of education in the country.

It is conceded that this "hands off" policy on the part of the government would lessen the financial burden on the government. This would, however, be the most retrograde step that would distort the development of higher education and make the institutions of higher education the hand-maids of private bodies, not all of whom are imbued with philanthropic motives.

International Scenario

A study of the situation at the international level reveals that complete privatisation does not exist in any country. In most of the countries, there is co-existence of public and private sectors. In some countries like Japan, the Republic of Korea, Philippines and the Latin American countries, mass privatisation and restricted public sectors have developed, while in most of the countries of South Asia including India, Africa and Western Europe, mixed systems dominated by public sector exist. In some countries like the Netherlands and Belgium both co-exist under public funding. Countries with limited private sector are Sweden, the United Kingdom, France, Spain, Thaliland etc. The point that needs to be emphasised is that it is difficult to follow the pattern available in other countries. Each country has to devise its own system consistent with its socio-political and academic requirements.

Implications of Privatisation

While it is difficult to under value the important role that private bodies have played in furthering the cause of education in India, the recent incursions of private enterprise in higher education, particularly in the field of professional education are far from reassuring. In fact, we are a mute witness to the mushrooming of privately run professional institutions in the form of Frankenstein of capitation fee charging colleges, in which the admissions are determined mainly on the basis of the paying capacity of students (or parents). These colleges have made serious inroads into the citadel of meritocracy, which should be the hall mark of the educational system of the country.

It has also been genuinely felt that privatisation of higher education would lead to the neglect of subject areas like languages and literature, museology and archaeology, music and fine arts etc, which have not much commercial value. Further, there is likely to be considerably less emphasis on research particularly in basic sciences because it has no immediate economic *quid-pro-quo.*

Marketisation of Education

Another strategy that has been suggested is the marketisation of higher education which is considered to be better than complete privatisation. This involves allowing market forces to determine the need for setting up of institutions, the hiring (and firing) of faculty, the choice of courses of study, the methods of teaching etc. The introduction of marketisation is based on three main propositions :

i) that efficiency is increased when government buys academic services from producers or subsidises students to buy them, rather than supplying them directly or indirectly through subsidy;

ii) that as enrolments rise, the private sector must relieve government of some of its cost burden, if acceptable quality of education is to be maintained; and

iii) that the benefits of higher education may accrue to private individuals; thereby the criteria of both efficiency and equity are served if students or their families make some contribution towards the cost of obtaining the benefits.

While one would agree that the education system should have relevance to socialite needs and that it should equip the students for entry into job market, it would be difficult to leave the system to the play of market forces. Education is a basic human investment and it is expected to produce various kinds of educated persons : professionals, economists, archaeologists, historians, men of literature and artists, who have mastered in fine arts, music etc. For quite a few, education is mere consumption good in that they want to enjoy literature, music etc for their own sake. Weighing everything in the scale of marketability would result in thwarting the creative potentialities of individuals and retard their natural development.

It is also not certain whether the system will become more efficient if the government transforms itself into a facilitator for making education available to the individuals rather than organising the system under its own management. If efficiency is measured strictly in terms of input-output ratios, then, perhaps, the system may appear to be more efficient under market economy. Education has, however, a long gestation period and it is difficult to measure its productivity in the short run under market economy.

The idea of cost sharing by the beneficiaries is, however, universally accepted. The large in-built subsidy that is indiscriminately given to students regardless of their capacity to pay, needs to be curtailed and the system of adequate cost recovery should be introduced so that the government is, to a certain extent, relieved of the financial burden that it has to bear.

The Way Out

There can be no single solution to the present impasse in the system of higher education. There has to be a multi-dimensional approach to resolve the present crisis. Admittedly, it is beyond the scope of this paper to deliberate on all the reforms needed in the university system. We shall, however, discuss some of the significant modifications that are urgently required in order to revamp the working of the universities.

i) Role of NGOs

It has been emphasised that privatisation of higher education is remedy worse than the disease. It will open up a pandora's box of problems and may result in the system of higher education getting out of hand. Higher education is too serious a business to be left to the whims and caprices of private investment agencies. While we reject complete privatisation of higher education, we feel that in a country of India's dimensions the non-government organisations (NGOs) have an important role to play in the financing and administration of higher education. It has been experienced that while the private bodies are keen to establish educational institutions, they are reluctant to provide adequate finances for their maintenance and development. It is, therefore, essential that they should be encouraged to participate in the administration and regular funding of institutions. The government and the academic bodies should, however, keep a watchful eye on the development of higher education under the auspices of private bodies.

ii) Resource Generation

The universities should also give considerable emphasis to the generation of internal resources. In this connection a number of suggestions have been made by the various committees appointed by the UGC and AICTE. Without repeating those recommendations, it is considered necessary to point out that there is need to augment cost recoveries from the students through tuition fees and other charges. There is also need to introduce a comprehensive scheme of loan assistance so as to, eventually, develop a self generating and self sustaining fund. There is also need for the universities to have more than a nodding aquaintance with the industrial and commercial houses so that they may contribute to university finances in return for some professional consultancy/research support to be made available by the universities.

iii) Regulating Inflows

No university system in the world can sustain itself if there is an unrestricted inflow of students aspiring to enter its portals. For various socio-economic reasons, there has been an unabated rush of students to acquire university degrees. Quite a few of these aspirants have little adjudged potentiality to benefit from higher education. The result is that a large majority of them fail to make the grade, making the university system a leaking cistern. In case, we have to improve the university system, it would be necessary to check this mad rush of students to the university institutions. Some sort of regulatory mechanism, particularly in the case of students taking up humanities and social science courses, will have to be adopted.

iv) Restructuring Curriculum

It is of utmost importance that university curricula should be made responsive to the needs of the society as also in conformity with the aptitudes and abilities of students. The experience in this direction so far has not been very encouraging. The UGC had introduced a scheme of restructuring of undergraduate courses under which 27 Curriculum Development Centres (CDC's) were set up to propose model curriculum in sciences, humanities and social sciences during the seventh plan. The scheme of restructuring undergraduate courses was last revised by the Commission in 1983. Up to the end of Seventh Plan, only 9 universities and 290 colleges had restructured undergraduate courses in accordance with UGC guidelines. The 27 CDCs established by the UGC in different universities have undertaken a comprehensive exercise to prepare model curricula in 27 subjects. These courses have been circulated to all the universities. The progress of the scheme has, however, not been encouraging.

Vocationalisation at the First Degree Level

Taking note of the problems encountered in the implementation of the scheme of restructuring of curriculum, the UGC has recently launched a scheme of introducing vocational courses as a part of the curriculum at the first degee level. The basic objective of the scheme is to bring about structural modifications of the first degree education in order to orient it towards careers and to enhance the employability of undergraduate students. The accent is, however, on self-employment.

The scheme has initially identified 35 courses with practical orientation. It is intended to introduce a few other courses mainly suited to the rural and tribal areas. The scheme has received enthusiastic response from the colleges and universities and has been introduced in 31 universities and about a thousand colleges so far.

The scheme has been in operation for the last five years. The utility of the scheme, however, depends upon the extent to which the students find placements in the job market or take up self employment careers. Unfortunately, bulk of the vocationally trained students have prefered to go in for postgraduate studies rather than entering the job market. In the process, the basic objective of the scheme has been largely defeated.

Need for Autonomy

The restructuring of courses suggested above necessitates, the grant of greater academic autonomy to educational institutions, particularly to colleges. If the colleges have to be tied down to the chariot wheels of universities, it would not be possible for them to bring about any innovative changes in the academic matters. The colleges should be encouraged to decide their academic and organisational problems and to experiment with new ideas. Unfortunately, the scheme of giving autonomous status to colleges has not been very popular in that only a little more than 100 colleges (mainly in South India), have opted for being autonomous. What is required is that a fresh look be given to the scheme and the factors responsible for the lack of progress of the scheme should be identified and appropriate remedial action-taken.

The need for respecting the autonomy of the universities has been stressed repeatedly by various commissions and committees. It has been rightly emphasised that the flowering of intellect takes place only in environment of academic freedom. Unfortunately, the actual implementation of this extremely desirable step is inversely correlated with the acceptance of its significance. The political bosses, who rule over the vast expanse of the various federating units of this country vie with one another in curbing the universities' freedom of action and forcing them to acquiesce to the whims and caprices of the parties or the conglomeration of parties which hold sway over the fate of the teeming millions of this country.

It would also be necessary that the universities should be accountable to the public, which are responsible for spending their hard earned money on their maintenance and development. The accountability of the universities would extend equally to their financial as well as academic performance. The university system is a part of the larger social configuration, whose needs should be looked after with utmost urgency. If the universities fail to perform their duty to the society with a fair degree of competence and efficiency, it would be unrealistic for them to take shelter under the plea of autonomy. Autonomy and accountability are two sides of the same coin and one cannot exist without the other.

To Conclude

We shall conclude this discussion by emphasising the following points :

1. The government cannot and should not abdicate its responsibility of providing adequate resources for institutions of higher education. Leaving the field solely to the private sector would lead to distortions in the development of higher education, with disastrous consequences for the country. The private bodies should, however be encouraged to contribute to higher education in terms of private inputs. They may set up and administer the educational institutions under the guidance of the government and the specialised agencies like the UGC, ICAR and AICTE.
2. The universities will have to be responsive to the changing needs of the society of which they are a part. They should introduce courses, which enable the students to enter the world of work rather than be a burden on the society.
3. In view of the changing pattern of priorities, with emphasis being placed on elementary and adult education, the government's capacity and willingness to provide resources for higher education has gone down. There is need for the universities to take measures to generate their own resources. For this purpose, they will have to come out of the shell of academic exclusiveness in which they have ensconced themselves.
4. There is need for regulating the admissions to university institutions. The present policy of an unrestricted inflow of all kinds of students to universities will have to be curbed. There will also be need for resisting the instinct of institutional proliferation, particularly on the part of politicians. Increasing recourse should be made to provide facilities through non-formal, and distance education systems.
5. While autonomy for university institutions is non-negotiable, the universities have also to be accountable to the community at large, which provides the much needed finances for their maintenance and development. This autonomy is not the close preserve of the universities only but should percolate down to the lowly colleges, which account for about 86 per cent of enrolment at the higher education stage. Further, the various departments of the university should also be given freedom of action to experiment with new ideas and to make innovative changes in the teaching/learning process. ❑

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Emerging Trends in Financing of Higher Education in India

M.S. Bawa*

Introduction

Higher Education — general, professional and technical — plays a vital role in the economic and social development of a country. It provides a wide range of increasingly sophisticated and every changing variety of trained manpower needed in education, engineering, medicine, agriculture, management, communication, law, public and private administration and services, social work etc. It produces researchers who through their activities deepen and extend frontiers of scientific and technical knowledge leading to innovations which energise engines of economic growth and development. Apart from developing human resources, higher education turns out thinkers who reflect on critical problems that afflict humanity and thereby ensure its survival and growth.

In India, higher education expanded at a very fast pace after independence. Whereas in 1951, there were 22 universities, 500 colleges, and 1 lakh students, in 1996 it had 228 universities, 6,759 colleges for general education, 1,770 colleges for professional education with an enrolment of 5.9 million students.

With the liberalisation, globalisation and privatisation of economy, and formation of stable government at the centre, India's economy is bound to grow at a faster pace in the coming years. This would in turn increase the demand for access to higher education. This demand will receive a further fillip with the execution of government's policy of eradication of poverty and universalisation of elementary education. It may be pointed out that compared to developed countries, India is far behind in the field of higher education. Whereas in U.S.A. and Europe nearly 50 per cent and 20 per cent college-age population receive higher education respectively, in India not more than 6 per cent of their counterparts have the privilege to do so. Thus India has a long leeway to make up.

Though the demand for higher education has been rising and is bound to increase in future, the government has started reducing financial support given to it since 1980s. This has led to a resource crisis in higher education. The present paper focuses on the causes that led to withdrawal of support to higher education by the government and critically exmines the possible alternative modes of raising financial resources to meet the requirements of higher education.

Factors Responsible for Withdrawal of Financial Support to Higher Education

There are many factors that account for withdrawal of financial support to higher education by the government. The most important ones are :

1. Comparative studies have been conducted in the 50s, 60s and 70s to find out the social and private rates of returns to investment at different levels of education. On the basis of these studies Psacharopoulas concluded that social and private rates of returns to primary education are the highest at the levels of education. Social rate of return to investment in primary education was found to be as high as 24 per cent. These findings led to a change in the policy of the government who decided to aim at universalisation of primary education at an accelerated pace. This change in policy led to the diversion of funds from higher education to primary education.
2. Research studies have shown that public spending on primary education is the best way to bring about social and economic equality. It holds a key to the problem of unemployment and poverty.
3. Researches conducted in India have brought out that by and large the beneficiaries of higher education are students belonging to higher socio-economic section of the society. Another finding of interest is that the cost of educating one student in higher education is equal to the cost of educating six students at primary level. The implications of these findings are that beneficiaries of higher education should bear full or a greater part of the cost of higher education and that state should allocate more of its resources for provision of primary education.
4. Higher education for its expansion requires financial resources. The government, however, has been finding it difficult to raise revenue resources to meet the ever increasing expenditure on account of resistance by the tax payers to increase

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in the rates of taxation on the one hand and on the other, low rates of economic growth and high rates of unemployment experienced by India in the last decade. Failure of the government to raise revenue resources has made it difficult for it to allocate more funds for the development of education in general and higher education in particular. Primary education being decidedly more important in national interest receives priority for allocation of funds, while higher education has perforce to be denied funds even to the extent it has been receiving.

All the factors stated above have resulted in a financial crunch for all institutions of higher learning formerly financed by the government. As a consequence not to speak of being able to meet the increasing demands for expansion and the needs of providing quality education, the public and public supported universities and educational institutions are finding it hard even to meet the recurring cost of education. This has resulted in search for alternate sources for funding higher education. The most important of these are raising fees and privatisation of education. These two solutions are discussed in the succeeding sections.

Alternative Sources for Financing Higher Education

1. *Fees*

Fees include all kinds of charges collected from the students for the tuition and other services rendered to them. Ever since independence, the income from fee of all types of educational institutions went on falling. Whereas income from this source was 20.39 per cent of total income from all the sources in 1950-57, it was 7.5 per cent in 1983-84. Attempts to increase income from this source at higher education level have been resisted by students' bodies on the grounds that this would increase students' cost of education and make it difficult for students belonging to disadvantaged sections of society to pursue higher education. The case for increasing fees in public or public supported educational institutions derives support form the following agruments :

Firstly, low level of fees entails low level of income to the educational institutions which increases the burden on the state exhequer to meet financial requirements of the educational institutions.

Secondly, low levels of fees are regressive in nature. As 80 per cent of the revenue comes to the government from indirect taxes, the contributions of the poor to the central revenue is more than that of the rich. However as the proportion of the rich students studying at higher education is much higher than that of the poor, the rich derive greater benefit out of it than the poor.

Because of the pressure by U.G.C. through such measures as reduction in grants, directing educational institutions to reduce existing faculty by a certain percentage etc, the trend towards increase in tuition and other types of fees has set in. Where student bodies have put up stiff resistance against increase in tuition fee, the educational institutions have been increasing other types of fee such as laboratory, library, games and sports, admission test, development etc. To safeguard the interest of the students belonging to disadvantaged sections, a policy of providing liberal scholarships is being followed. The most crucial question is that of the proper criteria for freeships and fixation of level of fees. One possibility is that of raising fees so as to recover the entire cost of education. A majority of educationists favour prescribing a norm for fixation of level of fees and hold that fees should not exceed 20 to 25 per cent of the total cost. The rest of the cost should be met through other sources such as government subsidy, donations, endowments etc. In this regard the following observation made in the Eighth Five Year Plan document requires to be taken note of "....... the fees charged should not be exorbitant and should be supplemented by provision of scholarships and other financial assistance to the students below the poverty line and loans to other students." The principle that should be kept in mind while raising fees is that they should not be so high as to inhibit students belonging to weaker sections of the society and the meritorious students from availing themselves of higher education.

Tilak (1998) has advanced two arguments against raising fees in higher education alongwith reduced government subsidies.

Firstly, this policy would bring about a fall in demand for higher education, which would in turn result in the medium to long run shortage of supply of manpower. This would adversely affect economic development.

Secondly, this policy would create tensions between the rich and the poor. A policy of steep rise in fee pushes the poor out of higher education thereby making education pro-rich. This is turn accentuates inequalities in the society, laying foundation for conflicts, hence instability in the society.

It may be pointed out that income from tuition fee charged from the students by the public or public supported educational institutions belongs to the government — central or state. The fee for other services charged from the students belongs to the educational institutions and the universities. Thus the decision to increase tuition fee and the extent to which it is to be raised depends on the policy of the government. The decisions regarding rise in fee for other services and level of its increase fall in the purview of educational institutions and the university. The government has been raising tuition fee gradually for certain courses. However, with cuts on grants to educational institutions and universities imposed by the government, there has been a marked increase in levels of fees charged for other services. Thus the trend now a days in the public or public supported educational institutions is towards raising fees to the national norm which ensures recovery of 20 to 25 per cent of total cost of providing education.

2. *Student Loans*

Another measure being suggested to solve the problem of financing higher education is provision of student loans. Amrik Singh (1992), World Bank (1994) and Tilak (1998) have advocated provision of loans at low rates of interest to students to meet the cost of their education. The purpose for providing loans is based on the market principle that those who benefit must pay. As the students benefit from higher education it is they who are required to pay the loan after they start earning. The scheme of providing loans is criticised on the grounds that (a) in the developing countries there is no tradition for financing one's education by raising loans, and (b) there is a high rate of educated unemployment in the developing countries. This affects adversely, on the one hand, the student's willingness to raise loans for financing education and on the other, rate of its recovery. Despite the criticism of the scheme of providing loans for financing education, it is noted that the scheme has of late found favour with students taking up professional courses like MBA, Engineering, Medicine etc. They have started raising loans. One reason for it is the income tax concession received by the income tax assessees on the amount of loan they pay in instalments after they secure employment. With the improvement in the employment market, this schme may find favour with the undergraduates too. Thus in India the trend, though subdued one, towards raising loans for financing one's education has set in. It is, however, at present confined to students who have taken up professional courses.

Privatization of Education

A. Establishment of Capitation fee/Self-financing educational institutions

At the beginning the private initiative in education in India was prompted by philanthropy. The main purpose before the private individuals and private organizations for setting up educational institutions was to render service to the society. Nowhere were the private bodies motivated to establish these institutions to earn profit. Through endowments and liberal donations the private bodies established educational institutions to serve the society. Over time, most of the private educational institutions belonged to the category of institutions founded, funded and run by private agencies but funded partly by government and partly by non-government sources. With the increase in demand for education and with abysmal rise in the recurring and non-recurring cost of providing education, the private effort in setting up such institutions declined significantly. Moreover increase in the recurring cost made it difficult for the private but government supported institutions to meet their own share of toal cost. Since seventies, welfare-state philosophy has been paving the way for free market philosophy. This philosophy stresses individual values and gains. It gives preference to individual freedom and choice as against social (or public choice). It is argued increasingly now a days that it is not the government, but the market that can do everything for everybody.

This philosophy entered the education sector as well. Correspondingly a reduced emphasis on education more particularly higher education by the government is promoted as an economically and educationally efficient proposal and that the role of government should be confined broadly to formulation of a coherent policy framework. (Quoted in *Tailak 1998*).

Pursuit of this approach has resulted in the establishment of higher eudcational institutions which are founded, funded and run by private agencies. The primary motive of the private bodies in setting up educational institutions is to earn profit. These educational institutions subscribe to the view of full recovery of cost from those who derive benefit from education. Such private higher education institutions, which have been established in India since the seventies were known as captitation fee colleges. As of now they are called self-financing colleges.

Genesis of Capitation Fee/Self-financing Colleges

Dr. T.M. Pai was pioneer in conceiving and giving practical shape to the idea of establishing capitation fee colleges. These colleges charged capitation fee from every student for giving admission to a course of study of his/her liking. Depending upon the demand, the amount of captitation fee charged varied from course to course. As a result of initaiative of Dr. Pai a number of educational institutions were set up in the fields of medicine, engineering, management etc at Manipal. These institutions have now been accorded the status of Deemed University.

Following the footsteps of Dr. Pai, a number of entrepreneurs who enjoyed the support of politicians came forward to set up capitation fee colleges. The *raison d'etre* for this new brand of colleges was the shortage of seats in the related courses at the government and government aided institutions and willingness of parents/guardians to buy seats for their wards. They look upon the expenditure involved as an investment expected to yield rich returns in the form of higher lifetime earnings.

A number of arguments have been advanced in support of capitation fee colleges. Chief among these are the following :

i. They do not depend on public subsidies. The money so saved can be utilized for other purposes;

ii. They have an ideal infrastructure and environment conducive to teaching and learning;

iii. They maintain higher level of internal efficiency;

iv They are able to monitor and regulate educational activities with ease; and

v. They are responsive to manpower requirements of the economy. As such they can introduce new courses, whenever the need arises and drop any course for which the demand has fallen.

Critique of Capitation Fee Colleges

Captitation fee colleges were subjected to severe criticism. Major points of criticism were that they charged heavy capitation fee and thereby violated provisions of equity enshrined in the Indian Constitution. Admissions based on captitation fee tantamounted to commercialisation of education. Not those who possessed highest merit and really deserved admission but only those who had the support of money power could secure admission to these colleges.

Another criticism of great import levelled against these colleges was that they promoted mediocrity at the cost of meritocracy. Under this system a student with lower marks but having support of money power had all the chances to get admitted to a course of his liking, whereas a meritorious student having no financial support had none. This made the meritorious students belonging to low socio-economic groups suffer under this system.

Supreme Court Intervention

Though politicians, academicians and educationists had no solution to meet the criticisms levelled against these colleges, the Supreme Court of India came forward with a solution which was both in consonance with the provisions of Indian Constitution as contained in Articles 14, 45 and 21 and at the same time realistic as it took cognisance of 'power' of money. Thus the solution given by the Supreme Court was in the best national interest.

While dealing with *Mohini Jain Vs Government of Karnataka Case*, the Supreme Court declared in 1992 that higher education is a fundamental right and a capitation fee is violative of Article 14 of the Indian Constitution which guarantees equality of opportunity to all Indian citizens. In another subsequent case which challenged this judgement, the Supreme Court in its judgement delivered on 4th February, 1993 ruled that every Indian citizen has a fundamental right to higher education subject to the limits of economic capacity and development of the union and state governments. It further declared that education is a public duty, which cannot be made into commerce. Therefore, even unaided private educational institutions seeking recognition or affiliation must act fairly, justly and reasonably. The Supreme Court laid down a scheme for making admissions and charging fees. The two most important features worth mentioning are as under :

First, admission to a course of study in a self-financing college shall be based on the principle of merit. To this effect the state government or the university or a public authority will conduct common entrance test. Second, fifty per cent of the total seats will be free seats, for which charges shall be payable at the rate for similar courses in the government colleges. The other fifty per cent shall be 'payment seats' for which higher charges for the same education in the same institution shall be payable. Lastly, the committee for determining the fees to be charged for 'payment seats' shall consist of Vice-Chancellor, the Secretary for Education or his nominee and the Director of Medical of Technical Education.

A perusal of the procedure laid down by the Supreme Court clearly shows that the court has protected the rights of meritorious students belonging to low socio-economic groups who cannot bear high fees. Moreover it has prohibited affluent section of the society from claiming a seat purely on the basis of money power. Under the new set up children belonging to higher income group shall have to compete and secure a place in the merit list if they want to seek admission in a self-financing college.

New Development

After streamlining of fee structure and procedure for admission etc by the Supreme Court, the trend towards establishment of self-financing colleges by private organisations has been continuing. The central and state governments too favour this trend as these colleges impose no financial burden on the exchequer. Moreover they help in meeting the ever rising demand for professional education. The trend has been reinforced with the establishment of Guru Gobind Singh Indraprastha University by the Government of Delhi through the Indraprastha Vishwavidyalaya Act, 1998. It is an affiliating and teaching university to facilitate and promote studies, research and extension work with focus on professional education in emerging areas of higher education in the disciplines of engineering, technology, management studies, medicine, pharmacy, nursing, education, law etc.

It being an affiliating university, any educational society, trust etc can seek affiliation to it. The opportunity provided by the university has elicited a very encouraging response from private and governmental organisations keen to establish self-financing educational institutions for running a variety of courses, the demand for which could not be met by the existing institutes of the universities in Delhi. The total seats in each self-financing educational institution affiliated to the university have been categorised as under :

1. Free Seats 50 %
2. Paid Seats 45%
3. NRI Seats 5%

The constitutional provision for reservation of seats is applicable only to free seats. Reservation to the extent of 27.5% of free seats — 15% for SC, 7.5% for ST and 5% for children/widows for personnel of armed or paramilitary forces killed or disabled in action — have been provided. The students who seek admission against NRI seats are not required to take admission test. These seats are to be filled up on payment of capitation fee. It may be observed that new structure in respect of self-financing colleges that has emerged after Supreme Court's intervention takes into accounts (i) the right of the meritorious students, (ii) the need for protection to students belonging to low socio-economic groups, and (iii) the financial requirements of the educational institutions. Besides, it curbs commercialisation of education.

Critique of Self-financing Colleges

The re-structured self-financing colleges have been criticised on the following grounds :

Firstly, a majority of these colleges have been set up for providing professional courses.

Secondly, with the establishment of self-financing education colleges a dual system of providing higher education has come into existence, that is, a system in which there exist on the one hand public or public supported educational institutions and on the other, self-financing educational institutions. Which one of the two would become a predominant feature of higher education in India would depend on the policy of the government. If the government goes on abdicating its social obligation by enforcing financial cuts, the pendulum will swing in favour of self-financing colleges. In such an event, the role UGC shall have to be redefined as self-financing educational institutions do not fall in its ambit. Moreover it is apprehended that discrimination in favour of self-financing institutions vis-a-vis govt. institutions in the matter of selection of prescribed proportion of different categories of candidates to be admitted and recruitment of teaching staff etc is likely to bring about a deterioration in the quality of instruction in government institutions leading to the type of situation prevailing in the secondary school system in India in which govt. schools have come to be looked upon as meant for students from the lower socio-economic strata. This would accentuate social inequalities leading to social conflicts.

Thirdly, advancement and deepening of knowledge depends on research and development activities. These activities are time consuming and bear fruit after a long time. Moreover, the returns to investment in these activities accrue more to society than to the institutions or individuals conducting research. As the basis of self-financing educational institutions is the profit motive, it is doubtful whether these institutions will be investing substantially in research and development activities.

Fourthly, monitoring and evaluation are very weak features of public administration in India. The private self-financing educational institutions take advantage of this weak system. At the time of seeking recognition and affiliation, these institutions agree to fulfil all the conditions laid down by the government and the university, but later flout all those conditions which are not favourable to them.

Fifthly, the provisions that fifty per cent of the seats will be free seats and fifty per cent will be paid seats and determination of fee structure by a stipulated body, has reduced the income of self-financing educational institutions. To meet the cost of education and at the same time to earn profit, these institutions are very likely to cut down their expenditure. As the primary component of cost of education is salary cost (about 80%), these institutions are likely to adopt such practices as payment of lower salaries to the staff than the stipulated ones, employ a small permanent faculty and get most of the work done through the services of guest lecturers etc. Such malpractices will make the quality of education imparted in these institutions suffer.

The criticism made above of the self-financing educational institutions is not intended to recommend their abolition. They have come to stay in the Indian scene and are likely to develop at a rapid pace in the future. The purpose of critical examination is to make the law enforcing bodies cautious about various aspects which tend to drift these institutions away from the purposes for which they have been established. By enforcing the conditions to which these institutions have agreed to, by making them pay stipulated pay scales to teaching and non-teaching staff, by coaxing them to provide for non-professional courses etc, the law enforcing agencies will pave the way for their further growth and development and would also enable them to provide quality service to the society.

B. Establishment of Private Universities

Another strategy to shift burden on the beneficiaries of higher education is through the mechanism of private universities. In USA about 20 per cent of the students study in such universities. Apart from USA, these universities have been established in New Zealand and in many Asian countries such as Korea, Japan, Taiwan, the Philippines and Bangladesh. The hallmark of these universities is promotion of quality education and conduct of examination and declaration of results on time. The factors that accounted for establishment of these universities in Bangladesh were related to inefficient functioning of the public universities. In these universities most of the teaching time was lost in strikes, examinations were not held as per schedule and the results were not declared on time. Besides, the universities did not create sufficient seats for various courses to meet ever increasing social demand. As a consequence of inefficient functioning of the public universities, a number of students belonging to higher income groups had to go abroad to study in foreign universities. Establishment of these universities stemmed the migration of these students.

In India, the government introduced 'The Private Universities (Establishment and Regulation) Bill of 1995' in the Rajya Sabha in August 1995. The bill provided for the establishment and incorporation of self-financing universities and for regulation of their functioning and for matters connected therewith or incidental thereto. Because of political uncertainties this bill could not be discussed and was put in the cold storage. With the establishment of a stable government now at the centre, it may be taken up for discussion. It is to be noted that as in the case of self-financing colleges, the force that motivates the entrepreneurs to set up private universities is to earn profit. These universities are generally set up for running professional oriented courses and cater to the educational needs of the students who belong to the higher socio-economic groups. These universities do not show any concern for equality and social accountability.

Conclusion

In the end, it is worthwhile to recapitulate the trends in respect of financing of higher education in India.

1. Both tuition fees and fees for other services are being raised in the public and public supported educational institutions. Compared to tuition fees, the rise in fees for other services has been substantial.
2. A scheme of student loans has been introduced. It is becoming popular among the students obtaining professional education.
3. The government is encouraging establishment of self-financing colleges/institutions which are founded, funded and run by private agencies. These recover the entire cost of providing education from the students.
4. Private univesities which subscribe to the principal of recovery of full cost from the beneficiaries of education have not taken root in India so far. Lack of funds for financing higher education may force the government to pass Private Universities Bill thereby paving the way for their establishment.

Bibliography

Altbach, Philip G. (1997). Let the Buyer Pay : International Trends in Funding Higher Education. *University News*. 35(37).

Amrik Singh. (1992). The Rationale of Higher Fees. *Yojana*, December 15.

Barooah, Debo Prasad (1997). Private Universities Bill — A Critique. *University News* 35(33).

Dubhashi, P.R. (1997). Privatization of Higher Education. *University News*. 35(26).

George Psacharopoulas (ed) (1987). *Economics of Education : Research Studies*. New York : Pergamon Press.

Ruddar Datt (1993). Aspects of Privatisation of Education. *Journal of Higher Education*. 16(2) Spring.

Tilak, Jandhyala B.G. (1998). *Changing Patterns of Financing Education*. Occasional Papers. NIEPA.

Sachidananda Mohanty (1997). Crisis in Higher Education, *University News*. 35(18). ❑

Career Orientation to Education
Vision and Action

M.L. Sisodia*

Introduction

Since independence, India has built the third largest tertiary educational system[1] in the world and yet, a sizeable number of the educated are unemployed. Further, every year we are adding to the number of unemployed and under-employed graduates. The educated unemployed is a serious drag on our development process.[2,3] The system by and large has failed (i) to generate a spirit of initiative and enterprise, (ii) to produce self-reliant and self-dependent citizens, (iii) to eradicate a feeling of helplessness and (iv) to reduce the gap between the world of work and the world of education. The world of education should find direct relevance and linkage with the needs and requirements of the world of work, i.e. courses and programmes should be need-based, employment-oriented and should help in self-employment generation. It should be by and large utilitarian in nature not liberal.[1] There should be effective and continuing interaction between education and productive work i.e. eudcation process is to be linked with production and employment.[2,3,8]

Education cannot create employment, it can only create persons fit for employment, whereas career oriented education renders it feasible for an individual to get a job or to be self-employed. It will instill dignity of labour in our land as is in the other advanced countries. Career orientation to education, therefore, seems to be a top priority of the National Policy on Education, 1986, updated in 1992.[4]

Various committees and commissions on Indian Education have deliberated over the concept and modalities of the implementation of vocational/need-based education since 1854 when the Wood's despatch insisted on vocationalisation of education. In 1978 this vocational stream was introduced at the higher secondary stage on the recommendation of the Kothari Commission[5] 1966. The NPE 1986/92[4] and its Programme of Action[6] advocated introduction of systematic, well planned and rigorously implemented programmes of Career Orientation to Education at the tertiary level to :

(i) enhance individual employability (self or wage earner),

(ii) reduce the mis-match between the demand and supply of skilled manpower,

(iii) provide an alternative for those pursuing higher education without any particular interest or purpose, and

(iv) provide opportunities for the vocational passout at + 2 level to enter the appropriate tertiary level programme for their professional growth and career advancement.

The Scheme, Implementation and Progress

In the Fifth Plan the UGC introduced the scheme of restructuring of courses at UG level. The scheme aimed at making the first degree courses more relevant to environment and to the developmental needs of the country, and to link education with work/field/practical experience and productivity. The programme had four major components : (i) foundation courses (ii) core courses, (iii) some applied studies, and (iv) involvement in programme of national or social service for the first two years. Earlier Rs. 5 lakhs per course was granted to colleges and later the amount was increased to Rs. 7.5 lakhs. Inspite of all these efforts the scheme could not make much headway. There is minimal impact of the programme in the country. Inspite of this the UGC has taken sufficient courage and caution in the launching of the Scheme of Career Orientation to Education at the first degree level in 1994-95 in conformity with the National Policy on Education 1986 (revised in 1992).[4]

It appointed a committee to look into the details of the programme at +3 stage and also to assess the feasibility of its introduction. Local needs and conditions vary widely. The list of (58 subjects) courses in which students could be trained for making them more readily employable and capable of exploiting self-employment opportunities, etc, are identified by the UGC Committee.[7] To begin with 209 institutions (19 universities and 190 colleges) were supported during 1994-95 for starting career oriented courses. The number of institutions covered under the scheme since 1994-95 and the position of grants released is given in Table 1. *(See at page 13)*

It is interesting to note that only 10 per cent of the total colleges and 13.6 per cent of the total universities were supported by the UGC till 1996-97. These institu-

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tions could introduce one to three such courses in 58 subjects identified by the core committee. Further, two to three week's training programmes were also organised for equipping teachers of the respective institutions for teaching career oriented subject(s) which were being offered by them. Besides giving training, they were also provided with reading material prepared during the training. The Standing Committee on Vocational Education (SCOVE) constituted monitoring groups, from amongst its members, and conducted monitoring exercises of the institutions which have introduced vocational subjects. The following major issues and observations emerged from the analysis of their reports.[10]

1. An awareness has been created about the vocational education programme with cross reference to employability and upward mobility to postgraduate courses.

2. Reservations have been observed on the part of the state governments in staffing and sustaining the UGC scheme after central assistance ceases.

3. While there has been initial reluctance by the industry to sign the Memorandum of Association (MoA) with the institutions, they are willing to accept the students without such elaborate legalistic requirements.

The above observations are being looked into by the SCOVE for suggesting corrective measures.

Status of Career Orientation to Education Programme in the State of Rajasthan

In the state of Rajasthan, where there are 6 traditional universities, 99 Government Colleges (GC) and 156 Private Colleges (PC), Career Oriented Courses were introduced in 21 colleges (16 GC, 5 PC), with cent per cent assistance from the UGC.[11] The list of colleges and subjects introduced is given in Annexure 1. It is noted that 12 colleges (9 GC and 3 PC) could introduce two career oriented courses and 9 colleges could introduce one course only. The most preferred course is Computer Application, which was introduced in 10 colleges. Tax Procedure and Practice course was introduced in four colleges. Bio-Technology and Industrial Chemistry each were introduced in three colleges. The rationale of preferences is not surprising. The preferences are general and they follow the global and national trend of seeking placement arising from the industry and technological developments.[12]

The state government also introduced on its own in some colleges, subjects like Diploma in Computer Science, Garment Production and Export Management, Textile Chemistry etc.

These efforts in the country and in the state are just a few drops in the ocean. A vast number of institutions are still to be covered.

Looking Ahead

Rural Based Career Oriented Courses

Inspite of the policy directive and in the present national context, the progress of vocationalisation and linking effectively with all socio-economic needs of the local people, at the tertiary level, has been dismal. It has also affected severely the vocationalisation programme of secondary education. Rajasthan is no exception.

Time and again it has been emphasised that the identification of right type of vocational courses and its implementation are key factors to success.[3,15] Therefore the present study was undertaken to identify major areas in different districts of the state of Rajasthan around which need-based vocational courses could be developed and introduced at the undergraduate level

Table 1. Number of Institutions covered under the UGC Scheme

S. No.	Year	Institutions Supported						Total Sum of Columns 1 and IV		
		Universities			Colleges					
		Number I	*Increase* II	*% of the total* III	*Number* IV	*Increase* V	*% to the total* VI	IV	*Increase*	*(Rs. in lakhs)*
1.	1994-95	19	—	8.92	190	—	3.1	209	—	264.50*
2.	1995-96	26	7	11.9	381	191	5.8	407	192	1740.50
3.	1996-97	31	5	13.6	698	317	10.3	729	322	2084.19

Sources : 1. *UGC Newsletter* Vol. 1., Apr.-June, 1996
2. *UGC Annual Report*, 1996-97 New Delhi
3. *Annual Report* 1995-96, 1996-97, 1997-98 MHRD, Govt. of India, New Delhi

so as to link them with production and employment i.e. enhance opportunities for self and to some extent wage employment in the region. Vocational orientation of education may enable the youth to gain skills, techniques and knowledge in line with the technological developments so as to become more employable and find job or go in for self employment. Hopefully this may reduce the mismatch between the output of education system and the world of work/manpower requirement. Thus it may add to the process of national and state development, economic growth and economic empowerment of citizens. It will also improve the quality of life.

In this background we collected socio-economic data (viz. population, occupational, land utilization, cropping pattern, livestock and industries) and analysed it following the method adopted earlier by Sisodia and Agarwal. (Statistical Supplement to Higher Education — Growth and Future Options, University Book House (P) Ltd., Jaipur).

Based on the above analysis the broad rural based areas identified are listed below.

1. Forest and Wildlife Management
2. Cultivation and Processing of Forest Products
3. Soil Conservation and Water Management
4. Dry Farming for desert districts.
5. Cultivation of Cereals, Pulses, Oil seeds and Commercial crops and Processing
6. Animal Farming
7. Agro-Services
8. Sheep and Wool
9. Poultry Farming and Processing of Poultry Products.
10. Cultivation of Cotton and Cotton based Ancilliary Units.
11. Cultivation of Surgarcane, and Sugar Technology, household products.
12. Desert Products and Utilisation.
13. Service Sector.
14. Hill-Agriculture
15. Silvipasture
16. Floriculture
17. Horticulture
18. Rural Craft
19. Dairy Farming
20. Leather Tannery
21. Dairy Technology.

Some of these subjects have been suggested by Das Gupta.[3]

Depending upon the need of the region one, two or three courses could be introduced in the colleges of the region.

Industrial and Service Sector linkage to vocational courses

Industries play an important role in the state's economy, particularly for generation of employment. As such it would be most relevant to introduce some vocational courses linked with industries and ancillary units in colleges around major units. Districtwise number of large and medium scale industries running units is given in Table 2 with employment and production value. We find that out of 430 units, around 298 units in the districts of Alwar, Jaipur, Bhilwara and Udaipur. Another important industrial district is Kota where some modern large scale industrial units are running. There ae 4262 factories covered under manufacturing and repair services units, which are further classified in 12 manufacturing groups. Their relative contribution in percentage terms is given in the Table 3. Industrial units classified according to the different category resources-based industries are depicted in Table 4. It is noted that around 53 per cent (in the year 1994-95) of the total industrial units are Agro-Animal Husbandry based, Forestry based and Mineral based. Therefore, it would be quite logical that university products in these areas may be able to find employment or start their own units i.e. self-employment.

We have earlier identified some Agro-Animal and Forestry based subjects of study. The state is rich in mineral resources and there is good scope for mineral based industries. For example there are a number of large, medium and small scale cement manufacturing units (224) and a sizeable number of workers are employed by these units. With the raw meterial in abundance in the state more and more new units of cement would be established. Therefore, the demand for skilled and trained manpower will always be there. Therefore, the colleges which are in the vicinity of these units may introduce a course on cement technology and related fields. Practical training can be given in these units.

As mentioned earlier, the state is rich in mineral resources; as such some vocational subjects related to earth sciences and mining be introduced, for example applied geology, surveying and drilling exploration, soil engineering etc.

Textile (cotton and man-made fibre) is another major area of industrial activity in the state. Therefore a number of courses in this area could be designed, for example (i) Textile craft, (ii) Textile design, (iii) Dyeing and printing cotton and man-made fibre (iv) Textile garment production etc and introduced.

In fact each industrial group could be a vocational subject of study in the colleges. Such courses have a high potential of self and wage employment.

Some other areas

(1) *Petrochemical/Oil Technology* — In the near future the western region of the state would need large trained and skilled manpower in the areas of petrochemicals etc. It is high time that some courses in these areas are developed and introduced in the colleges of western region of the state.

(2) *Power Sector* — The state is moving towards non-conventional sources of energy. Therefore, it is timely to introduce a course related to non-conventional sources of energy — solar energy and wind power etc.

(3) *Service Sector* — Services like trading, storage, transportation, communication etc are the traditional areas in this sector. Some new services that have emerged are advertising, marketing and management. All these services are going through a sea change due to continued advancements in the technologies involved. There is unlimited scope for gainful employment and great potential for exporting these services. Some suggested areas for vocational courses are automation of financial sector, marketing communication and allied services, mass media, entertainment media, multimedia, telecom, advertising, media consultancy, marketing logistics, trading and distribution, security services, etc.

Conclusion

The prerequisite for implementing need-based vocational subjects in a particular college is to identify one, two or three subjects which have the potential for self employment, after discussion with the community. The present analysis could be the initial input for such an excercise. Curriculum development must be more practical oriented in skill acquisition and expose the learner to working conditions outside the protected atmosphere.[9]

References

1. K.B. Powar, Higher Education in India Since Independence; Retrospect and Future options, *JHE* 20 (4), Winter 1997.
2. Abid Hussain, *Report on launching of Employment oriented courses at the University of Delhi, 1996-97.*
3. D.K. Das Gupta, Rural Based Vocational Courses, *JHE* 21 (1), Spring 1998.
4. *National Policy on Education-1986* (with Modification undertaken in 1992), MHRD, Department of Education, New Delhi (Publication No. 1723).
5. Report of the Education Commission (1964-66) : *Educational and National Development*, NCERT, New Delhi, 1971 (Kothari Commission)
6. National Policy on Education-*Programme of Action 1986* (Publication No. 1952) updated in 1992, New Delhi, 1992.
7. *Report of the Committee on Vocationalisation of First Degree Level*, UGC, New Delhi, 1993.
8. "Education and Employment", *Hindustan Times*, 21 Jan 1999.
9. Viba Sing - Relevance of Syllabus, *Hindustan Times*, 21 Jan 1999.
10. UGC *Annual Report* 1996-97.
22. R.P. Singh., Re-engineering Education for Tomorrow, *University News* 37 (13), March 29, 1999.
23. Dilli, K.T., Educated Unemployed — Need for a Holistic Approach, *The Hindu*, 7 June 1994, P.26
24. O.N. Awasthi, Strongly Vocationalized and Quality Education in Japan and Its Impact on Economy, *University News* 35 (35), 1997.
25. CDC *Annual Report* 1979-80, University of Rajasthan, Jaipur. ❑

Table 2. Large & Medium Scale Industries Running Units as on 31.3.96 in the State of Rajasthan

S.No.	*Division/Distric*	*No. of Units*	*Employment (Nos.)*	*Production Value (Rs. Lacs)*	*Fixed Capital (Rs. Lacs)*
1	*2*	*3*	*4*	*5*	*6*
	Ajmer Division				
1.	Ajmer	35	7723	26098.18	20941.74
2.	Bhilwara	55	24544	119351.18	73033.06
3.	Nagaur	6	613	2567.27	7120.09
4.	Tonk	2	458	2832.28	4119.78
	Total	98	33338	150848.91	105214.67
	Bikaner Division				
5.	Bikaner	6	576	4064.23	2549.33
6.	Churu	2	108	1434.20	734.83
7.	Sri Ganganagar	8	4777	19069.20	7445.76
8.	Hanumangarh	3	1757	5513.77	1368.59
	Total	19	7218	30081.4	12098.51
	Jaipur Division				
9.	Alwar	139	26656	447522.25	236186.88
10.	Bharatpur	4	3313	14785.98	7806.54
11.	Dholpur	1	260	1355.53	428.00
12.	Dausa	0	0	0.00	0.00
13.	Jaipur	61	14796	124789.20	67559.85
14.	Jhunjhunu	4	7810	37626.00	39055.04

1	2	3	4	5	6
15.	Sikar	4	1879	7600.67	4391.50
	Total	213	54714	633679.63	355427.81
	Jodhpur Division				
16.	Barmer	0	0	0.00	0.00
17.	Jaisalmer	2	127	739.00	174.00
18.	Jalore	2	152	1123.48	733.11
19.	Jodhpur	22	5820	43185.87	21586.38
20.	Pali	8	4414	16121.14	7213.22
21.	Sirohi	19	4221	43693.37	87479.90
	Total	53	14743	104862.86	117186.61
	Kota Division				
22.	Bundi	4	1825	11034.23	4548.42
23.	Baran	1	252	27123.02	35837.92
24.	Jalawar	3	4020	25792.54	31653.61
25.	S. Madhopur+Karouli	2	150	1113.93	2427.59
26.	Kota	21	13799	175231.79	256568.91
	Total	31	20046	240295.51	331036.45
	Udaipur Division				
27.	Banswara	9	5417	27529.87	27113.19
28.	Chittorgarh	12	5648	91378.12	130923.85
29.	Dungarpur	2	2551	8292.00	4900.00
30.	Udaipur	43	14263	91427.55	64200.06
31.	Rajsamand	10	2949	34477.65	59803.73
	Total	76	30828	253105.19	286940.83

Table 3. Number of Manufacturing and Repair Service Units

S. No.	*Name of Industries Groups*	*No of Units 1994-95*	*Percentage of total units*
1	2	3	4
1.	Manufacture of all textile groups & textile products.	1383	32.45
2.	Manufacture of food products and beverages, tobacoo and tobacco products.	508	11.92
3.	Manufacture of non-metallic mineral products.	923	21.66
4.	Manufacture of basic metal & alloy industries & manufacture of metal products & parts.	412	9.67
5	Manufacture of machinery tools & parts & electric machinery etc.	308	7.23
6.	Manufacture of chemicals & chemical products [except products of petroleum & coal].	228	5.35
7.	Repair services	98	2.30
8.	Manufacture of paper products, printing, publishing and allied industries.	104	2.44
9.	Manufacture of rubber, plastic, petroleum products.	133	3.12
10.	Manufacture of transport equipments.	56	1.31
11.	Manufacture of wood & wood products, furniture & fixtures.	36	0.84
12.	Other manufacturing industries.	73	1.71
	Total	4262	100.00

Table 4. Number of Resources Based Industries

S. No.	*Name of Category of Industries*	*1986-87*		*1987-88*		*1989-90*		*1992-93*		*1993-94*		*1994-95*	
		No of Units	*% of total*	*No. of Units*	*% of total*	*No. of Units*	*% of total*	*No. of Units*	*% of total*	*No. of Units*	*% of total*	*No. of Unit*	*% of total*
		1		*2*		*3*		*4*		*5*		*6*	
1.	Resources based Industries												
	i Agro-Animal husbandry based	1061	37.06	1537	45.83	1276	39.44	1528	39.80	1716	40.90	1767	39.73
	ii Forestry based	56	1.96	45	1.34	61	1.89	71	1.85	75	1.79	88	1.98
	iii Mineral based	475	16.59	389	11.60	347	10.73	425	11.07	472	11.25	498	11.20
2.	Consumer goods ind.	223	07.79	486	14.49	612	18.92	757	19.72	839	19.99	930	20.91
3.	Producer goods ind.	212	7.40	243	7.25	216	6.68	231	6.02	243	5.79	270	6.07
4.	General Engg. Ind.	378	13.20	357	10.64	443	13.69	514	13.39	521	12.42	541	12.16
5.	Chemical Ind.	225	8.91	84	2.50	82	2.53	111	2.89	118	2.81	133	2.99
6.	Printing and publishing Ind.	67	2.34	58	1.73	55	1.70	50	1.30	52	1.24	52	1.17
7.	Electric, light & power & gas.	122	4.26	142	4.23	129	3.99	138	3.60	146	3.48	155	3.48
8.	Water works.	14	0.49	13	0.39	14	0.43	14	0.36	14	0.33	14	0.31
	Total	2863	100.00	3354	100.00	3235	100.00	3839	100.00	4196	100.00	4448	100.00

Annexure 1

List of the Colleges where UGC Approved Career Oriented Courses are Conducted

S. No.	*Colleges (Govt.)*	*Courses*	
1.	Govt. Lohia College, Churu	(1)	Tax Procedure and Practice
		(2)	Functional English
2.	Govt. Bangad College, Deedwana	(1)	Functional Hindi
		(2)	Computer Application
3.	Dungar College, Bikaner	(1)	Functional Hindi
		(2)	Computer Application
4.	J.D.B. Govt. Girls Collge, Kota	(1)	Bio-Technology
		(2)	Office Management and Secretarial Practice
5.	M.L.V. Govt. College, Bhilwara	(1)	Computer Application
		(2)	Industrial Chemistry
6.	Govt. College, Kota	(1)	Computer Application
		(2)	Bio-Technology*
7.	M.S.J. College, Bharatpur	(1)	Computer Application
		(2)	Tax Procedure and Practice
8.	Govt. College, Ajmer	(1)	Computer Application
		(2)	Bio-Technology and Specimen Preparation
9.	R.R. College, Alwar	(1)	Industrial Chemistry
		(2)	Tax Procedure and Practice
10.	S.M.M. Govt. Girls College, Bharatpur	(1)	Computer Application
11.	Govt. College, Sikar	(1)	Industrial Chemistry
12.	Meera Girls College, Udaipur	(1)	Computer Application
13.	Govt. Colleges, Dausa	(1)	Computer Application
14.	Govt. Arts College, Alwar	(1)	Functional English
15.	M.S. Girls College, Bikaner	(1)	Communication English
16.	Bangad College, Pali	(1)	Insurance and Practice

S. No.	*Pivate Colleges*	*Courses*	
1.	Sri Satsai College For Women, Jaipur	(1)	Computer Application
		(2)	Foreign Trade Practice and Procedure
2.	Savitri Girls College, Ajmer	(1)	Functional English
		(2)	Clinical Nutrition
3.	Vidya Vinodni College, Khetri	(1)	Geo-Application and
		(2)	Drilling Advertisement, Sales Promotion and Marketing
4.	Kanodia Mahila College, Jaipur	(1)	Office Management and Secretarial Practice
5.	Veer Balika Mahila College, Jaipur	(1)	Tax Procedure and Practice

Outstanding Leadership

Eminent Industrialist, Mr. Rahul Bajaj, Chairman and Managing Director, Bajaj Auto Limited and President, CII, delivered the Convocation Address at the 49th annual convocation of the SNDT Women's University, Mumbai. He said, "To realize our goals and aspirations, we need outstanding leadership in every field and at every level. Leadership means that there is no substitute for excellence, no tolerance of mediocrity and no compromise with integrity. Leadership is not just charisma, not public relations, not showmanship. Leadership is performance, consistent behaviour and trust-worthiness." Excerpts

Education is no longer something that is imparted during one stage of an individual's life. We need to continuously undergo education from the cradle to the grave. It is the quality and level of education and training which will, in the coming decades, separate successful countries and companies from those that will be left behind.

I believe that the technical and vocational training in our educational system needs to be modernized. Existing apprenticeship and entrepreneurship development schemes should also be expanded.

I believe the government is considering whether primary education should be made free and compulsory. This is welcome but we shall have to determine how this will be enforced.

Many questions come to mind. How do we decentralize the implementation of education? Should we continue to subsidise higher education to the extent it is being done at present? How do we attract young men and women to study the sciences and technology?

What is perhaps needed is for Indian industry and educational institutions to work together in the following ways :

1. Designing the curriculum;
2. Praticipating in the Management of the Institution, if required;
3. Providing practical inputs through expert lectures;
4. Joint technology scanning with an eye on the future; and
5. Helping in placements.

The Indian Economy and Indian Industry

Economic growth and development requires political stability. We had this by and large till 1996. However, in less than 4 years, we have had 4 general elections, 6 governments and 6 Prime Minister ! Partly as a result of this, economic growth slowed down during this period.

On the othe hand, these elections and change of governments gave the clear message that India is politically mature and that democracy is here to stay. Political equations and formulations may change but democratic traditions will endure.

These elections also gave a message that voters want performance and not just slogan mongering and populism. Chandra Babu Naidu in Andhra Pradesh is an outstanding example. This is a happy development. But, we cannot take the future for granted. It is for all of us, to ensure stability of the political frame-work and observance of democratic norms. This is the first challenge before you. You should influence opinion in favour of political stability in favour of democratic principles and respect for law. National interest must come first.

Many of our young highly qualified graduates seek greener pastures abroad, specially in the US. It does no credit to India that many of our outstanding young minds, who are trained at great cost to the nation, do not find it worthwhile to work for the betterment of their motherland. The fault is not of these young men and women. We in India have to create an environment which is conducive to not only keep all of you in India, but which is attractive enough to bring back many of the Indians at present abroad.

In today's "intelligent" world, in this networking society, technology and people are very important. Technology will be the key driver to India's economic and industrial development. Industry-Institute linkages can contribute tremendously to technological development in the country.

Industry itself is going through a major transformation. Competitive pressures are already taking their toll. Companies, which have ignored customer needs and aspirations, are beginning to fall by the way side. The future will be of those companies, which can reinvent themselves under extremely competitive pressures and adopt the new tools of Information Technology and communications.

In fact, IT and communications will change the way we do business. So will the process of globalisation. This will throw up both challenges and opportunities. We shall have to successfully face the challenges and competition from the MNCs in the developed world. Simultaneously, we must be in a position to take advantage of the opportunities.

Otherwise, most of these will be usurped by the developed world. The message here is that we have to be extremely nimbel footed and innovative. Organization structures will have to change and become more flexible and responsive to the changing needs of the customer and the market place. Government will have to create an environment which is conducive to the growth of Indian Multinationals. I believe, India is poised to be a strong economic player in the world.

We are already the 5th largest economy in the world on the basis of purchasing power parity. It is expected that this ranking will improve to the 4th position by the year 2020. This is good but not good enough, as this essentially represents that we are a nation of a billion people. What we need is substantial impr ovement in terms of per-capita — per-capita income and per-capita consumption of various goods and services. And, of course, in terms of facilities for education and health care to levels which are second to none in the world.

We know that Indians abroad do exceptionally well. What happens when we are in India? We know what needs to be done to move ahead. Our problem is lack of work ethic, our inability to work as a team and a lack of will to implement what we know needs to be done.

To realize our goals and aspirations, we need outstanding leadership in every field and at very level. Leadership means that there is no substitute for excellence, no tolerance of mediocrity and no compromise with integrity. Leadership is not just charisma, not public relations, not showmanship. Leadership is perfomance, consistent behaviour and trust-worthiness.

With our resources, both human and otherwise, I believe that by 2020 India can become a great economic power and Indians can have a per-capita income, on the basis of purchasing power parity, which is among the top 10 nations in the World. This would be an ambitious but achievable goal.

There is no reason for us to aim at anything less. The future, is in our hands. It is for us to make the future happen. ❑

PANJAB UNIVERSITY
CHANDIGARH

ENTRANCE TESTS
FOR ADMISSIONS FOR THE ACADEMIC SESSION 2000-2001

The Panjab University will hold Entrance Tests for admission to the following courses at CHANDIGARH CENTRES ONLY.

1. University Teaching Departments/ School/ Centre.
   i) University Business School - M.Com.
   ii) Department of Laws - LL.B. (Professional - 3 year course both morning and evening after graduation) and LL.M. (2 year full-time) course.
   iii) P.U Regional Centre, Muktsar- LL.B. & Post - Graduate Diploma in Computer Science and Applications (PGDCA)
   iv) Department of Library and Information Science - Bachelor of Library and Information Science and Master of Library and Information Science.
   v) Department of Mass Communication - Master of Mass Communication (M.M.C.) - Two year course
   vi) Department of Physical Education - B.P.Ed. and M.A. (Physical Education)
   vii) Science Departments:
      a) M Sc. (Hons. School)- Anthropology, Bio-Chemistry, Bio- Physics, Botany, Chemistry, Geology, Microbiology and Zoology.
      (Students of B.Sc. (Hons. School) of Panjab University are not required to appear in the test for admission to the relevent M.Sc. (Hons. School) course.)
      b) M.Sc (2 year course) - Bio-technology (2 seats - for only those who have studied vocational Bio-technology for 3 years at the undergraduate level).
      c) M.Sc. (2 year course) - Maths, Statistics and Physics
   viii) Dept. of Computer Science and Applications - Master of Computer Science & Applications (M.C.A.).

2. Affiliated Colleges of Panjab University where the following master's level Courses are being taught: M.Sc (2 year) - Mathematics, Botany & Chemistry and Master of Commerce (M.Com.)

[illegible]

Minimum qualification (s) to appear in the Entrance Tests for all courses is/ are Bachelor's degree with the appropriate combination of subjects, percentage of marks and fulfilment of all other conditions as given in the respective prospectuses for the concerned courses.

NOTE : Foreign/ NRI/ NRI sponsored candidates seeking admission to the concerned courses where such seats have been specially created, are required to compete amongst themselves for the seats created for them by appearing in the P.U. Entrance Tests if they are in India. Those living and applying from abroad, will be required to produce the test Score of Graduation Record Examination (GRE) from Princeton, U.S.A. for admission to M.C.A., LL.B., LL.M., B.Lib. & M.Lib. Inf. Sc., M.M.C. (2 year course), B.P.Ed., M.A. (Phy. Edu.) and M.Sc. (Hons. School)/ M.Sc. (2 year) courses.

CENTRE OF EXAMINATION : CHANDIGARH ONLY FOR ALL THE ABOVE COURSES

[illegible]

Course (s)	Date	Day
1.M.C.A. / PGDCA/ LL.B. & LL.M.	6-6-2000	Tuesday
2 M Sc. (Hons School) & M.Sc. (2 year) Courses	7-6-2000 to 9-6-2000	Wednesday to Friday
3.B.Lib. & Inf. Sc./ M.lib & Inf. Sc./ M.M.C. & M Com	10-6-2000	Saturday
4.B.P.Ed., M.A (Phy. Ed.), M.A. (Education)	11-6-2000	Sunday

SPECIAL NOTE: There will be no clash in date (s)/ timings of papers for different courses

[illegible]

The prospectus (including application form) will be made available for sale w.e.f. March 13, 2000 (Monday).

(A) BY HAND: On payment of Rs. 150/- in CASH , from any one of the following sources:
   i) The Cashier, Panjab University, Chandigarh
   ii) The Chairman, VVBIS & IS, Sadhu Ashram, Hoshiarpur
   iii) The Librarian, Panjab University Extension Library, Civil Lines, Ludhiana
   iv) The Director, Panjab University Regional Centre, Muktsar

(B) BY POST:
Request for Prospectus and Application Form, for obtaining by Regd. Post, be addressed to the Manager Publication Bureau, by remitting Rs. 180/- only through Crossed A/c payee Bank Draft drawn in favour of the Registrar, Panjab University, Chandigarh (payable at Chandigarh). No request for supply of prospectus Application form by post shall be entertained, if it is received in the office of the Publication Bureau after April 5, 2000, (Wednesday).

THE LAST DATE FOR RECEIPT OF APPLICATION FORMS complete in all respects either by hand or by post in the office of Joint Controller of Examinations (CET CELL) is Monday, the 24th April, 2000 (upto 5.00 p.m.).

The Panjab University does not take responsibility for any postal delay or delay in delivery by courier or by any other means of transmission, for loss in transit of the application form. Application forms, incomplete in any manner or not accompanied by University cash receipt/bank draft for the full fee and those received after 5.00 p.m. on 24-04-2000 shall not be entertained under any circumstances.

Controller of Examinations

SPREA SHEET

Human Poverty in Selec eveloping Countries - I

HDI rank	Human poverty index (HPI-1) 1997		People not expected to survive to age 40 (as % of total population) 1997	Adult illiteracy rate (%) 1997	Population without access			Under-weight children under age five (%) 1990-1997	Real GDP per capita (PPP$)			Population below income poverty line (%)	
	Rank	Value (%)			To safe water (%) 1990-1997	To health services (%) 1981-1992	To sanitation (%) 1990-1997		Poorest 20% 1980-1994	Richest 20% 1980-1994	Richest 20% to poorest 20% 1980-1994	$1 a day (1985 PPP$) 1989-1994	National poverty line 1989-1994
1. Singapore	–	–	2.3	8.6	0	0	–	–	4,934	47,311	9.6	–	–
2. Hong Kong, China (SAR)	–	–	2.2	7.6	–	–	–	–	5,821	50,666	8.7	–	–
3. Korea, Rep. of	–	–	4.7	2.8	7	0	0	–	–	–	–	–	–
4. Chile	6	4.8	4.5	4.8	9	5	–	1	1,558	27,145	17.4	15.0	–
5. Kuwait	–	–	2.9	19.6	–	0	–	6	–	–	–	–	–
6. Bahrain	10	9.8	4.7	13.8	6	0	3	9	–	–	–	–	–
7. Argentina	–	–	5.6	3.5	29	–	32	–	–	–	–	–	26.0
8. United Arab Emirates	27	17.7	3.1	25.2	3	10	8	14	–	–	–	–	–
9. Mexico	13	10.6	8.3	9.9	15	9	28	14	1,437	19,383	13.5	14.9	34.0
10. Malaysia	18	14.2	4.9	14.3	22	12	6	19	1,923	22,447	11.7	5.6	16.0
11. Cuba	5	4.7	4.5	4.1	7	0	34	9	–	–	–	–	–
12. Mauritius	15	12.1	4.9	17.0	2	1	0	16	–	–	–	–	11.0
13. Thailand	29	18.7	10.5	5.3	19	41	4	19	1,778	16,732	9.4	0.1	13.0
14. Philippines	20	16.3	9.2	5.4	16	–	25	28	842	6,190	7.4	27.5	41.0
15. Saudi Arabia	–	–	5.9	26.6	5	2	14	–	–	–	–	–	–
16. Sri Lanka	33	20.4	5.3	9.3	43	10	37	34	1,348	5,954	4.4	4.0	22.0
17. Maldives	43	25.4	13.5	4.3	40	25	56	43	–	–	–	–	–
18. Jordan	9	9.8	7.1	12.8	2	10	23	9	1,292	10,972	8.5	2.5	15.0
19. Iran, Islamic Rep. of	34	20.4	9.7	26.7	10	27	19	16	–	–	–	–	–
20. China	30	19.0	7.9	17.1	33	–	76	16	722	5,114	7.1	29.4	11.0
21. South Africa	31	19.1	23.4	16.0	13	–	13	9	516	9,897	19.2	23.7	–
22. Indonesia	46	27.7	12.8	15.0	25	57	41	34	1,422	6,654	4.7	14.5	8.0
23. Viet Nam	51	28.7	11.6	8.1	57	–	79	41	406	2,288	5.6	–	51.0

Source : Human Development Report 1999.

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR
ADMISSION NOTICE : 2000-2001

Applications are invited for admission to 3-semester M.Tech., M.C.P. and 4-semester M.B.M. Post-Graduate programmes of the Institute in the session 2000-2001.

M.Tech. programmes are offered by the Departments of Aerospace Engg., Agril & Food Engg., Chemical Engg., Civil Engg., Comp. Sc. & Engg., Elect. Engg., Electronics & Elect. Comm. Engg., Geology & Geophysics, Humanities & Social Sc., Industrial Engg., & Management, Mathematics, Mechanical Engg., Metallurgical & Materials Engg., Mining Engg., Ocean Engg. & Naval Architecture, Physics & Meteorology, Biotechnology and Centres of Cryogenic Engg., Materials Science, and Rubber Technology. MBM is offered by Vinod Gupta School of Management and MCP by Dept. of Arch. & Regional Planning.

Qualifications : Bachelor's degree in Engineering/Technology or Master's degree in Science, Humanities or Arts depending on the specialisation intended with valid GATE score. For the courses in Architecture & Regional Planning and Humanities & Social Sciences, MA in appropriate subjects and NET qualification are essential. *Seats are reserved for SC/ST and Physically handicapped students as per Institute rules.*

Scholarship : Candidates admitted to M.Tech/MCP will be offered postgraduate scholarship of Rs. 5000/- per month on merit. Admission to a few candidates may be offered without scholarship.

Sponsored Candidates : Qualified candidates sponsored by recognised organisations may apply for admission to any programme. Notification for admission to MBM programme for sponsored candidates is advertised separately. GATE score is not mandatory for those candidates.

Fees payable per semester (likely to be revised) :

a) **M.Tech/MCP : Rs. 13,600/- + Rs. 8,200/-** (at the time of admission only) and **Rs. 8,100/- + Rs. 2,200/-** (each semester)

b) **MBM : Rs. 36,000/-** (each semester)

There is a provision for grant of tuition fee waiver to M.Tech/MCP candidates admitted with Institute Scholarship to a maximum of 50%. SC&ST candidates get complete exemption from tuition fee.

How to apply : Application Forms and Information Brochures will be available on payment of a fee of Rs. 250/- in cash from the following branches of **Canara Bank** from **29.03.2000** to **17.04.2000.**

Ahmedabad : Revdi Bazar, **Allahabad :** 16 MG Marg, Civil Lines, **Bangalore :** 12 J.C. Road, **Bhopal :** Berasia Road, **Bhubaneswar :** Plot No. 3, Bapuji Nagar, **Calcutta :** 9/10 Raja J.C. Mallick Road, Jadavpur and 14 & 15 A.P.C. Road, Sealdah, **Chandigarh :** SCO 117-119, Sector-17C, **Chennai :** TC St. Branch, 154 TC St, **Delhi :** H 54, Bombay Life Bldg., Connaught Circus, **Guwahati :** 14A Hem Barua Road, Fancy Bazar, **Hyderabad :** 4-1-954, Abid Road, **Kakinada :** 16/34-1-69, Jawahar St. **Kharagpur :** Fatak Bazar, Kharida, **Lucknow :** Main Branch, 31/32 Halwasiya Court, M.G. Road, Hajratganj, **Mumbai :** No. 65 Sonawala Bldg., B.S. Marg, **Nagpur :** Sardar Bazar, Residency Road, **Patna :** South Gandhi Maidan, **Trivandrum :** Ibrahim Co. Bldg. (First floor), Chalani, **Vijayawada :** Governor Pet, Eluru Road, **Visakhapatnam :** 28-10/3/8, First floor, Surya Bagh.

Application Forms and Information Brochures will also be available from GATE Office, IIT Kharagpur-721 302 on submission of Demand draft of Rs. 250/- drawn in favour of IIT Kharagpur payable at Kharagpur.

Last date for :

a) Receiving request for Application Form by Post : 13.04.2000.

b) Issue of Application Form from GATE Office by hand: 24.04.2000.

c) Submission of completed Application Form : 24.04.2000.

Compulsory Environmental Studies

From the next academic session, Delhi University will introduce compulsory environmental education at the undergraduate level. From the academic year 2000-2001, the course on environment will be an additional compulsory qualifying paper.

The course, titled 'Environment : Awareness, Issues and Management' will be introduced in the first year of all streams with an examination in the course at the end of the year.

The scheme of examination will consist of a theory paper of 75 marks and an internal assessment of 25 marks. The theory paper will consist of 75 multiple choice objective type of questions and the pass marks will be the same as for any other qualifying paper.

The course is being introduced as an attempt to bring attitudinal changes in lifestyles "leading to sustainable development of natural resources". It attempts to inculcate the concept among students that "unnatural perturbations of the environment will endanger the biosphere in one way or other."

While seeking to promote awareness that the environment must form the basis of economic development, the course also aims to provide a knowledge base of environmental issues which can be utilised for the protection of the environment.

The course syllabus comprises five units. Unit 1 will be an introduction to the subject with topics such as components of the environment, study of eco-systems and communities, linkages within these components such as food chains and cycling of chemical substances. Unit 2 comprises the study of environmental problems with special reference to India, such as air, noise, water and soil pollution.

Units 3 and 4 include study of impact and causes of environmental degradation respectively such as climate changes, acid rains, radioactive pollution, oil spills and loss of marine life and commercial exploitation.

The last unit includes the 'Management of Environment and Sustainability' which comprises technological, economic, political, cultural and legal solutions besides conservation strategies and disaster management. But the course will not remain just a theoretical enterprise.

It also suggests field activities and trips by students to sewage treatment plants, industrial units, pollution monitoring units, coal ash dumping sites and bio-gas plants. Both formal and non-formal teaching methods will be followed with the involvement of NGOs and environmental experts in imparting training.

The Department of Environmental Biology will assist in initiating training programmes for teachers and undertake preparation of materials. There will also be an advisory committee to oversee the entire programme.

National Seminar on Teacher Accountability

C.R. College of Education (M.D. University, Rohtak proposes to organise a National Seminar on Teacher Accountability and Teacher Organisations on March 24-25, 2000.

Teacher accountability has two aspects — moral and legal or contractual. Moral accountability is based upon a sense of responsibility — a feeling that one is responsible to students, parents, colleagues and oneself. Legal accountability, on the other hand, refers to one's being responsible to one's employer in terms of fulfilling the terms and conditions of service.

Like all other professional organisations, teachers organisations are also there to safeguard the interests and welfare of the teachers. They also have to work like a vigilant watchman for the proper observance of a code of ethics or conduct in tune with the criteria of accountability evolved for the teachers.

UGC-sponsored and NCTE assisted, this National Seminar is expected to generate workable ideas about teacher accountability and role of professional teacher organisations.

The theme Teacher Accountability and Teacher Organisations will be discussed under the sub-themes : Concept and need of teacher accountability; Criteria of teacher accountability; Code of ethics for teachers and teacher organisations; and Role of teacher organisations towards teacher accountability.

Further details may be had from Dr. S.S. Dahiya, C.R. College of Education, Rohtak-124 001 (Haryana).

Mangalore Varsity Convocation

Former Lok Sabha speaker, Mr. Shivraj Patil called upon the universities to focus their attention on the problems of the future and universe at large and not just concentrating on local issues. "It is better if universities remain at the higher level for which they are meant to exist," he said while delivering the convocation address at the Mangalore University. Mr. Patil said varsities should widen the horizon of understanding of their students and not make them parochial and limited in their outlook on life. They should facilitate students to live a life with reasonable comfort, but they should not stop there. The varsities should carry on research in areas not covered so far. They should develop longing for truth, longing for proximity of fact to the ultimate truth. The greater part of the success depends on what varsity discovers more than what it teaches, he said.

Mr. Shivraj Patil urged the varsities to ensure both material and spiritual advancement of their students so that a healthy and harmonious society came into existence. If society adopts a holistic approach to life, it will realise that there is a "unity" between science, technology and spirituality. However, spirituality is not religion, he clarified.

In the ultimate analysis, science technology and spirituality are not different, but one and the same. In the past it was not easy to learn and understand science and technology. Now it is not easy to understand spirituality, he felt.

Elaborating further, Mr. Patil said human beings were weak materially in the past and now they are weak spiritually, in body, mind and soul. The challenges faced in present-day education are harmonising, synthesising and creating holistic approach and knowledge. He called upon Mangalore University to face this challenge effectively.

Osmania & California Varsities Tie Up

Osmania University and University of California, Riverside, California (USA) have entered into a MoU (Memorandum of Understanding) to forge linkages and promote bilateral cooperation in the fields of teaching, research and extension. The MoU was signed by Prof. D.C. Reddy, Vice-Chancellor, Osmania University and Mr. Raymond L. Orbach, Chancellor, University of California, Riverside, USA, on 16th February 2000 in the presence of Hon'ble Chief Minister of Andhra Pradesh, Sri N. Chandrababu Naidu. The MoU forms part of the Friendship City Agreement between Hyderabad and City of Riverside.

The MoU underscores the importance of contacts and exchanges in the field of higher learning and envisages collaboration and cooperation in training and exchange of students, researchers and faculty and joint programmes in research and education in a broader framework.

Speaking on the occasion, Mr. Raymond Orbach said that their University looked to Hyderabad as the new destination for its extension activity and called for bilateral cooperation in emerging areas of knowledge viz. Biotechnology, Information Technology and Energy and Environment between Osmania University and University of California, Riverside.

Prof. D.C. Reddy said that international cooperation held the key to the pursuit of excellence in higher education and stressed the proactive role of universities in establishing a knowledge based society. He said that the MoU would open new vistas of academic cooperation between the two institutions for the advancement of knowledge.

Earlier, the Deans of University of California, Riverside had individual meetings with the Principals and senior faculty of Arts, Science and Engineering Colleges in the University Campus.

Industrialisation of North East

Lakhimpur Commerce College, North Lakhimpur recently organised a two-day National Seminar on the "Role of Promotional Agencies in the Industrialisation of North East". The seminar was financially assisted by the University Grants Commission. Dr. D. Bharali, Retd. Professor of Commerce, Gauhati University in his inaugural address observed that promotional agencies both at national and state level are affected by a number of problems which need to be addressed with far-sight so as to augment the process of industrialisation. Principal of the college Dr. H.K. Baruwa extended a hearty welcome to all. Shri B.N. Sarma Barua, Ex-Principal of Lakhimpur Commerce College presided over the inaugural function.

Altogether ten papers were

presented in the three technical sessions by participants from Manipur, Gauhati, Dibrugarh, Assam and Arunachal Universities. The papers highlighted the role of various promotional agencies like AFC, ASIDC, IIE, DI & CC, ATDC, NEICOL (Manipur), FIs & DBs, NEC, Rural Banks in the industrialisation of North-East and suggested measures for eradicating the bottlenecks to push up their efficiency.

The participants took active part in the discussions which followed the presentation of papers in each session. The Seminar recommended : (a) Development of professional management, (b) Specific policy for recovery of loans, (c) Selection of projects considering viability and feasibility, and (d) Improvement of infrastructural facilities.

Shri Jiten Sarma, Sr. Lecturer of the Department of Management, Lakhimpur Commerce College acted as Co-ordinator of the Seminar.

We Congratulate...

Dr. S.D. Awale who has been appointed Vice-Chancellor of Dr. Babasaheb Ambedkar Technological University, Lonere.

Prof. P.K. Khosla who has been appointed Vice-Chancellor, Himachal Pradesh Krishi Vishwavidyalaya, Palampur.

Dr. B.K. Oza who has been appointed Vice-Chancellor, Bhavnagar Uni-versity, Bhavnagar.

Prof. Ramesh Chandra who has been appointed Vice-Chancellor, Ch. Charan Singh University, Meerut.

News from UGC

Countrywide Classroom Programme

Between 15th March to 21st March, 2000 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 6.30 a.m. on all days of the week.

15.3.2000
"Know Your Vegetables-II Spinach"
"अनीता की कहानी-II"
"Eye to Eye : Sutureless Cataract Surgery"
"Seeds of Change"

16.3.2000
"Pathfinders : Mrinalini Sarabhai"
"Entrepreneurship-III : Turning Around"

17.3.2000
"Dramatic Monologue 'Andrea Del Sarto'"
"तलाश कातिल की-I"
"Aurad-i-Fathiyya — A Kashmiri Muslim"
"Louvre Museum"

18.3.2000
"गवरी सामाजिक पृष्ठभूमि-III"
"Why it Does Not Stick"

19.3.2000
"ढलती शाम लोक नाट्यों की"
"Fiddlers of the Thatch"

20.3.2000
"Multimedia-II"
"Balloon and the Needle"
"The Story of Print"
"Touch of Genius"

21.3.2000
"Question Time-139"
"The Communication Revolution-II"
"Print and Print Making"
"Vasundhara : The Dyin Lake"

News from Abroad

Assessing Quality in Higher Education

RMIT University, Melbourne and its Centre for Management Quality Research will host the 12th International Conference on Assessing Quality in Higher Education on June 28-30, 2000. The Conference is sponsored by Indiana University-Purdue University, Indianapolis and the Caledonian, Conferences, Scotland, (formerly H+E Associates, UK).

In virtually every country there is concern about ensuring the quality, relevance, and value of higher education. Different national higher education systems have developed varying approaches to issues such as quality improvement, outcomes assessment, academic audit, and institutional effectiveness.

The purpose of this conference series are to enable participants to: 1) gain knowledge of current issues and practices in assessment of quality in higher education world-wide and 2) interact with leading exponents of a variety of perspectives in a limited-enrollment environment.

This meeting — the twelfth in the series — aims to move the debate on these issues forward by enlarging the focus to include, in additions to topics discussed at ealier meetings:

- global trends and issues in quality assessment
- the international impact of quality assessment/assurance procedures, particularly in the developing world
- quality, employability and HE-business linkages
- setting up QA/quality management systems and associated issues and problems.

Contributions that involve students are welcome. (A limited number of places at special student rates are available, on a strictly first-come first-served basis for participants from India, Malaysia, Southern Africa and Thailand.

Interest Groups

Small group discussion session on specific areas of interest will extend the exploration of conference themes. The groups meet several times during the conference, engaging in focused dialogue on selected common issues and providing reports of their findings for discussion at the final plenary session... Please select *two* of the topics below and list them by letter in order of preference on the registration form. You will be placed in your first choice of group if possible.

A: International Issues in Quality Assessment

B: The Development of Quality Assurance Policy

C: Quality and Faculty/Staff Development

D: Quality, Graduate Employability and HE-Business Linkages

E: TQM, Quality Awards and ISO 9000 in HE

F: Assessment of Teaching and Learning

G: Performance Indicators and Institutional Assessment

H: Issues in Establishing Quality Assurance/Management Systems.

Further details can be hed from Patrick J Devlin, Assistant Principal (Quality), Glasgow Caledonian University, Glasgow G4 0BA, Scotland, e-mail : P.J.Devlin@gcal.ac.uk, Fax : (+44) 141 331 3171.

LAKSHMIBAI NATIONAL INSTITUTE OF PHYSICAL EDUCATION, GWALIOR
(Deemed University)

ADVERTISEMENT

Applications are invited for making the panel of eligible candidates for the recruitment on the following posts in the University on the prescribed form obtainable either in cash from University Counter or by sending a self addressed stamped envelope for Rs. 20/- of size 9"x4" alongwith a demand draft of Rs. 100/- drawn in favour of the Registrar, LNIPE, Gwalior so as to reach on or before 25-3-2000 duly filed in and accompanied with a demand draft for Rs. 150/- (Rs 50/- for SC/ST candidates) payable to the Registrar ·

S. No.	Posts	Scale of Pay (in Rupees)	Nos.	Category
1	Professor in Physical Education/ Health Education/Coaching/ Research and Sports Statistics/ Allied Sciences of Physical Education	16400-22400	05	Gen 4, OBC-1
2	Lecturer in Physical Education and its Allied Sciences	8000-13500	11	Gen 1, SC-3, ST-1, OBC-6
3	Librarian	8000-13500	01	Gen -1
4	Assistant Director (Finance) / Assistant Finance Officer on deputation	8000-13500	01	Gen -1
5	Assistant Director/Assistant Registrar	8000-13500	01	Gen -1
6.	Yoga Instructor (Female)	5500-9000	01	Gen -1
7	Junior Hindi Translator	4500-7000	01	Gen -1
8	Stenographer (Hindi)	4000-6000	01	Gen -1
9	Mess Supervisor (Men/Women)	5500-9000	02	Gen.1, OBC-1
10.	Compounder/Nurse	4500-7000	01	ST-1
11.	Lower Division Clerk/Hindi Typist	3050-4590	03	Gen.-3

Reservation Abbreviations · SC=Scheduled Caste, ST=Scheduled Tribes, OBC=Other Backward Class, Gen=General.

Foreign candidates and those who want to avoid the risk of delay in obtaining prescribed form may, down load the application form from web-site "http://www.lnipe.edu" and apply with full bio-data together with a fee of Rs. 250/- and its equivalent foreign currency payable to the Registrar, LNIPE, Gwalior-474 002 (MP) India.

The qualifications and pay scales are as prescribed by the U.G.C. and laid down in the prescribed application forms. Details of qualifications and instructions will be supplied with the application form The reservations for SC/ST and OBC candidates will be given as per rules. In the case of non-availability of suitable candidates from reserved categories, action to deploy the candidates from general category may also be considered on adhoc basis subject to the reservation roaster. Candidates already in service must apply through proper channel. The Institute reserves the right to fill-up or not to fill-up the advertised posts.

(Dr. Rishipal Singh)
Registrar

Higher Education in a Global Village

The Nineteenth International Seminar on Staff and Educational Development (ISSED 2000) on Higher Education in a Global Village will be hosted by University of the South West in Association with Caledonian Conferences, Glasgow, Scotland at Sparkling Waters Hotel Rustenburg, South Africa on 24-27 July 2000.

The ISSED Seminars were set up in 1981 to offer an action learning alternative to conventional HE conferences. Since then 17 institutions have shared in hosting over 800 participants from 40 nations around the globe.

The special Interest Groups form the core of the seminar. You choose two topics from the list and the committee places you in one of them. You prepare and contribute working materials for discussion in your group: these can be in any form provided they are in English and suitable for working on during the meeting. Samples of ongoing work are of particular interest.

In the group, you work using the contributed materials on a problem or issue agreed at the first group meeting. Each group prepares a report for the final plenary session.

The interest group work is supplemented by more conventional workshop & paper presentations, keynote speakers, and informal discussion. All group work, paper or workshop proposals are internationally peer reviewed.

Interest Groups and Topics

A: Developing HE Policy for a Global Village

1. HE Policy and Human Resource Capital
2. HE Policy and concepts of Social Good
3. HE Policy, Finance and Popular Demand
4. Creating a Balance between Different HE Paradigms
5. HE Policy on the World Stage — 'Have' & Have-Nots'
6. HE Policy & Africa's Place in the Global Village.

B: Dealing with the Effects of HE Globalisation

1. Quality and Standards in an International Setting
2. Coping with Transnational Students, Course Programs and Institutional Partnerships
3. Multi-Culturalism and the University
4. Higher Education in developing Societies.

C: The Future Organisation of HE Institutions

1. Organising for the New Technologies
2. Meeting the Combined Challenges of Quality Competitiveness & Cost-Efficiency
3. Relating to Business, Industry and the Professions
4. Organising for National Development.

D: Staff/Faculty Development for a Global Village

1. Staff Development and Media Production
2. Staff Development for Technology-Based Instruction
3. Training and Evaluating Higher Edn Teachers
4. Staff Development in the Developing World
5. Staff Development for Non-academic Staff.

E: Teaching and Learning in a Global Village

1. Teaching and Learning at a Distance
2. Caring for Students with Special Needs or Problems
3. Teaching and Learning for Employability
4. Teaching Critical Thinking
5. Fostering the Learning Organisation.

Further details may be obtained from Patrick J Devlin, Assistant Principal (Quality), Glasgow Caledonian University, Glasgow G4 0BA, Scotland, Fax +44 141 331 3171, E-mail : P.J.Devlin@gcal.ac.uk.

Scholarships for Study in Japan

The Tokyu Foundation for Inbound Students, Tokyo, offers 24 scholarships to non-Japanese postgraduate students from Asia-Pacific regions enrolled as regular students in Japanese graduate schools and their affiliated research institutes as of April, 2000. After securing admission students may apply for these scholarships by 15 November 2000. Students should be under 35 years at doctor's courses and under 30 years at master's courses as of April 1, 2000. The scholarship, awarded for up to 24 months, carries a monthly award of 160,000 yen plus expenses for specified academic meetings.

Selection will be made based on past school records, study plans, letters of recommendation and personal interview.

Applicants should use the application forms in Japanese, because an applicant should be able to understand Japanese for study and research as a rule. Further details and application forms can be had from The Tokyu Foundation for Inbound Students 1-21-2, Dogenzaka, Shibuya-ku, Tokyo 150-0043, Japan.

UNIVERSITY OF DELHI

ANNOUNCES ADMISSION TO

M.Sc. - Ph.D. Combined and M.Sc. Degree in Biomedical Sciences Beginning July, 2000

The University of Delhi, an internationally renowned premier Institution of the country originally founded in 1922 by an Act of Parliament, wishes to admit talented students on an all India basis to pursue post-graduate studies and to carry out research in frontier areas in Biomedical Sciences at Dr. B.R. Ambedkar Center for Biomedical Research (ACBR) of the University, in collaboration with neighbouring institutions. ACBR has a Memorandum of Understanding (MoU) with Center for Biochemical Technology (CBT-CSIR), in addition to collaborative research and teaching programme with other research institutions and industries. We have excellent research facilities and outstanding faculty, and provide opportunities to students to participate in exploring new horizons in Biomedical Sciences and to take up major scientific challenges and provide leadership in future.

A total of twenty meritorious students will be awarded "Catch Them Young" fellowships provided by CSIR to the Institute @Rs. 1500/- p.m. during 1st and 2nd year M.Sc. courses. In addition, students may be awarded endowment fellowships like Prof. Gurbakhsh Singh Memorial Award, Prof. GBV Subramanian Award and Kala Ram Awards (five), Jawahar Bhawan Trust Merit-cum-Means Scholarships (Two) and the scholarships from the Jean and Ashit Ganguly Education Fund (1 for M.Sc. and 2 for Ph.D.)

Applications are invited on the prescribed form for the following Courses :

RESEARCH TEACHING PROGRAMMES

1. M.Sc. - Ph.D. Combined Degree in Biomedical Sciences (Full Time 4 Years Course) comprising areas like: General Biomedical Science, Molecular Genetics, Tumor Biology, Medicinal Chemistry, Medical Biotechnology, Metabolic Pharmacology, Toxicology, Immunology, Radiation Biology, Natural Products and Indigenous Medicine, Structural Biology, Laboratory Medicine and Molecular Medicine.

2. M.Sc. Degree in Biomedical Sciences (Full Time 2 Years Course) : comprising of areas outlined above.

Eligibility (for 1 & 2) : Bachelor's Degree in Biomedical Sciences / Life Sciences / Zoology / Botany / Microbiology / Chemisty/ Environmental Biology/ Biotechnology/ Laboratory Techniques/ B. Pharma/ B.V.Sc. or M.B.B.S. with atleast 55% marks from University of Delhi or any other examination recognized by the University or equivalent thereto.

3. Ph. D. Degree in Biomedical Sciences

Medicinal Chemistry, Biochemistry, Bio-Inorganic Chemistry, Bio-Organic Chemistry, Medical Biotechnology, Pharmaceutics, Reproductive Biology, Developmental Biology, Molecular Genetics, Microbiology and Cell Biology, Chemistry and Biology of Heme, Tumor Biology, Immunology, Radiation Biology, Natural Products and Indigenous Medicine, Structural Biology, Laboratory Medicine, Metabolic Pharmacology, Toxicology etc.

Eligibility : Master's Degree in the appropriate field of Science, M.V. Sc., M. Pharma or M.D. with a minimum of 55% marks. CSIR-NET qualified candidates will be preferred.

[illegible]

How To Apply : The Bulletin of Information cum Application form for all the above courses can be obtained from the **Director, Dr. B.R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi-110 007,** by sending a bank draft of **Rs. 630/-** for General (**Rs. 185/-** for Scheduled Caste and Scheduled Tribe) categories made out in favour of the **"Registrar, University of Delhi"** drawn on State Bank of India, Service Branch (Code 7687) or *may be collected in person* from the office of Dr. B.R. Ambedkar Center for Biomedical Research, University of Delhi on all working days from 9.00 a.m. to 1.00 p.m. against Demand Draft of **Rs. 600/-** (for General) or **Rs.150/-** (for SC/ST). The request by mail must reach the office of the Director, on or before **April 30th, 2000.** The sale of bulletin will be closed on **May 10th, 2000.** The last date of receipt of completed application form at ACBR is **May 15th, 2000.**

Admission Test : Admission Test for M.Sc. - Ph.D. and M.Sc. Degree Courses will be held on **Saturday, June 3rd, 2000 at 10:00 a.m. at the University of Delhi (North Campus).** The candidates qualifying the admission test will be called for an interview and group discussion.

The admission test will have questions, on all the areas as given above, at the Undergraduate level. The M.Sc. course will have a special paper in Medicinal Chemistry in the IInd year. Candidates who have B.Sc. or B.Sc. (Hons.) in Chemistry may profitably undertake the specialisation in Medicinal Chemistry and pursue a career in drug research, in addition to others.

K.K. PANDA
REGISTRAR

Last Date of Receiving Completed Form : May 15, 2000

Advocating Spontaneity

D. Murali Manohar*

R.K. Singh. Above the Earth's Green. Calcutta, Writers Workshop, 1997. Pp. 128. Rs. 180/- (Hardback) Rs. 80/- (Flexiback).

Is there any poet who writes his poems without altering the words, rephrasing, restructuring? Here is a poet who seems to have penned down the thoughts as they came to his mind whatsoever the length. I believe that the poet has been advocating spontaneity to the lovers of poetry. The length of the poems clearly indicate how spontaneous the thoughts are! His poems have been published in India and abroad. In Australia, two poems, in USA eight poems, in Canada one poem, in New Zealand two poems, he has published. In this collection R.K. Singh has 109 poems to his credit out of which just five poems are titled at the bottom and not at the top! One could immediately think of Shakespeare's sonnets when we look at the number which the poet has given to his poems. He also gives an index at the end of the book (in Preface he claims that he has given the Contents page!). The important thing to note is that he has written all these poems in the span of three years starting from 1994 to 1996.

I have broadly categorized the poems into two themes/imageries: Nature and Human. The Nature themes/imageries in the poems are as follows: sun imagery in the poems numbers 3, 5, 10, 14, 18, 24, 39, 46, 50, 96 and 101; sea imagery in the poems numbers 4, 12, and 24; river imagery in the poem 5; dark imagery in the poem numbers 6, 7, 8, 22, 44, 48, 61 and 67; fire imagery in the poem numbers 10 and 13; death imagery in the poem numbers 43 and 45; pollution in the poem numbers 49 and 52; snake imagery in 54; waves in the poem 63; drought image in the poem 73.

The human theme/imagery in the poems are as follows: sexual theme/imagery in the poem numbers 12, 15, 16, 18, 20, 52, 55, 59, 68, 78, 82, 88, 89, 91, 92, 93 and 99; loneliness in the poem 6; concern for dogs and excuse them in the poem 25; poems on the present politics in the poem numbers 29, 30, 42 and 47; bluffing in the poem 31; depression in the poem numbers 34, 36, 75, 79 and 95; how the academic standards are going down in the poem 35; surprisingly the poem on women are just two in 57 and 60; poems on the philosophy in the poem numbers 77, 107 and 109; materialistic life in the poem 80; leading a principled life in the poem 81; current problems of India reflect in the poem numbers 27, 29, 30, 31, 34, 35, 36, 42, 43, 47 and 80.

R.K. Singh, being a poet, has shown respect to poetry by placing the poem on "Poetry" in the first and also paying a tribute to the poetry as though God is invoked in the beginning of any event. He also shows respect to the pre-independence poet Rabindranath Tagore and apologises in his poem number 36 where regretting that the days are not like the days of Rabindranath Tagore with reference to India and its people. In poem number 69 the poet's attitude suggests that the (Prohibition) anti-arrack movement is a failure as it happened in Andhra Pradesh and Haryana where for a short period of time it was successful and later on in both the states prohibition is lifted except on cheap liquour (only officially). The poet is also concerned about the condition of men shouldering the tension on them with the unnecessary wants in the poem number 80.

The language of the poems is very lucid (like Nissim Ezekiel and Kamala Das) and one need not worry about the vocabulary and comprehension. There is no ornamentation in the poems. He does show some kind of rhyming pattern in his poetry.

Coming to the proof reading, despite the 'Errata' that the poet and the publisher have provided one can still find two typographical errors at the page 48, poem 36, line 1 where one finds "submission" instead of "submission". The second error is in page 68, poem 56, line 7 we have "reallty" instead of "reality". On the whole, however, the book has been brought out very well. ❑

Lecturer in English, Department of English, University of Hyderabad, Hyderabad-500 046.

ANNAI VELANKANNI COLLEGE
THOLAYAVATTAM
KANYAKUMARI DISTRICT-629 157

Wanted One Professor and Two Lecturers to the MCA Department of this College for immediate appointment.

Qualification : As per AICTE norms.

Scale of Pay : As per AICTE norms.

Apply to the Correspondent on or before 25.3.2000.

Fr. J. Lucas
Correspondent
Annai Velankanni College

Tholayavattam,
6.3.2000

ANNAMALAI UNIVERSITY
NOTIFICATION

Applications are invited from the Teacher candidates for admission to the following courses beginning in the Summer of 2000. The cost of application form is noted against each.

1. **B.P.Ed. (Summer)**	— Rs. 100/- each
2. **M.P.Ed. (Summer)**	— Rs. 100/- each
3. **M.Phil. (Summer Sequential Programme)** **(i) Education** **(ii) Physical Education**	— Rs. 200/- each

Application along with Prospectus can be had from the undersigned on payment of the prescribed fees (as indicated above) in person or through a demand draft drawn in favour of The Registrar, Annamalai University, payable at Indian Bank or Bank of Madura Limited, Annamalainagar or State Bank of India, Chidambaram with a self-addressed kraft envelope of size 30 cm x 13 cm and stamped to the value of Rs. 4/- along with a requisition specifically stating the course for which application is required. Refer Prospectus for more details.

Note :

Other banks demand drafts, cheques and postal orders will not be accepted.

Issue of Application form from — 03.03.2000

Last date for issue and receipt of application form — 31.03.2000

F.No. 120/K2/2000/Advt. No. 3
Annamalainagar-608 002

Dr. M. Rathinasabapathy
REGISTRAR

INDIAN SCIENCE CONGRESS ASSOCIATION YOUNG SCIENTISTS AWARD PROGRAMME

2000 — 2001

To encourage Young Scientists, the Indian Science Congress Association under the above programme introduced a number of awards in January 1981. Each award carries a cash amount of Rs. 5,000/- and a certificate of merit.

1) Only members (ordinary) and life members who have paid their subscriptions **on or before August 31, 2000** are eligible to apply for the ISCA Young Scientists Award programme. The upper age limit of the candidates for the award is 32 years as reckoned on **December 31, 1999** (only those born on or after January 1, 1968 are eligible).

2) Three copies of Biodata, including full name and address alongwith the date of birth (duly supported by attested copy of the certificate), membership status & number, research experience, (in case of joint authorship, the candidate has to be acknowledged by the other author(s) in terms of a certificate as having made the major contribution) and certification that the work has been carried out in India and has not been submitted for any award, should be appended to the complete paper.

3) 3 copies of the full paper alongwith 3 copies of abstracts in about 300 words shall have to reach the office of the **General Secretary (Hqrs.) on or before August 31, 2000.** At the top of each copy of the paper and its abstract, the name of the Section shall have to be indicated clearly.

4) A member could present only 1 paper in only 1 section and not a second paper with the same or any other contents in any other sections, for the year under considerations for competing in the ISCA Young Scientists Award Programme.

5) Full paper will be assessed for their content and at most **6** Young Scientists in each section will be invited to make oral presentation of their papers during the Science Congress Session, who will be provided with admissible travelling and daily allowances by the ISCA (maximum of A.C. III-tier train fare by convenient shortest route to and from residence/Institute to venue and D.A. as per ISCA rules).

6) The final selection for the Awards will be done by a duly constituted committee and the awards will be given by the General President at the meeting of the General Body or Valedictory Session of the 88th Indian Science Congress to be held at Delhi from January 3-7, 2001.

7) All correspondences should be made to :

General Secretary (Hqrs.),
Indian Science Congress Association,
14, Dr. Biresh Guha Street,
Calcutta-700 017
Fax : 0091-33-2402551
E-mail : isca.assocn@gems.vsnl.net.in
Telegram : SCICONG.CALCUTTA

ANNAMALAI UNIVERSITY

MBBS/BDS/BPT/BOT/B.Sc (Nursing) and B.Pharm Degree Courses Entrance Examinations — 2000

NOTIFICATION

Roc.No. K2/108/Advt. No. 2/2000

Annamalainagar-608 002
Dated : 25.02.2000

A common Entrance Examination will be conducted in selected centres in Tamil Nadu by the Annamalai University for the Candidates who intend to seek admission for the following SELF FINANCING COURSES in the University for the year 2000-2001.

COURSES OFFERED

(1) M.B.B.S. (2) B.D.S. (3) B.P.T. (4) B.O.T. (5) B.Sc. (Nursing) and (6) B.Pharm.

Appearing in the Entrance Examinations is Compulsory for the candidates seeking admission to the above courses. These Entrance Examinations are for the candidates belonging to Tamil Nadu and also other States in India.

This Notification relates only to the Entrance Examinations. Candidates are advised to refer to separate notification which will be issued around second week of May 2000 by the Univesity inviting applications for admission to the various courses.

Selection to various courses will be governed by the procedures laid down by the University.

GENERAL INSTRUCTIONS

Candidates who are appearing for Higher Secondary or Equivalent qualifying examinations during March-May 2000 and Candidates who have already passed HSC or other equivalent qualifying examinations are eligible to apply for these entrance examinations.

The Entrance Examinations will be conducted in the following schedule and subjects :**

Paper 1 . Biology (Botany & Zoology)	— 04.05.2000 (Forenoon)
Paper 2 : Physical Sciences (Physics & Chemistry)	— 04.05.2000 (Afternoon)

**Questions for the above examinations will be based only on the syllabi and Text Books prescribed for the Second Year of the Tamil Nadu HSC (Academic) Course.

Admission will be made on the basis of marks obtained in the relevant subjects in the qualifying examinations (HSC or equivalent) and in the Entrance Examinations, besides an interview to be conducted by the University.

The selection will be made on the basis of aggregate marks obtained in (i) Qualifying Examination — 200 (ii) Entrance Examination — 100 and (iii) Interview — 30.

COST OF APPLICATION FORM

The Cost of application form is — Rs. 100/-

METHOD OF PAYMENT

Application forms can be obtained IN PERSON BY CASH PAYMENT at the University Cash Counter on all working days. (Holidays : Saturday, Sunday & other Government Holidays)

To get application form by Post the candidate should send a requisition letter along with a Demand Draft for Rs. 100/- drawn in favour of "The Registrar, **ANNAMALAI UNIVERSITY**, Annamalainagar-608 002" obtained on or after 25.02.2000 from **Indian Bank/ Bank of Madura/State Bank of India**, payable at **Annamalainagar or Chidambaram** and a self-addressed kraft envelope of size 35 cm x 15 cm with stamps affixed to the value of Rs. 10/- **Draft from any other Bank will not be accepted.** Candidates are advised to write their name and address on the reverse of the Demand Draft.

Application forms will be sent only by Ordinary Post and the University will not be held responsible for non-receipt of application forms.

SCHEDULE

Application form will be issued from	— 03.03.2000
Last date for issue and receipt of filled in application form in the University	— 03.04.2000

Note : Please quote the reference Number of the above Notification on the top of the request letter without fail.

Dr. M. Rathinasabapathy
REGISTRAR

ANNAMALAI UNIVERSITY

B.E./B.E. (Chem.) B.Sc. (Ag.)/B.Sc. (Hort.) Degree Courses Entrance Examinations — 2000

NOTIFICATION

Roc.No. K2/108/Advt. No. 1/2000

Annamalainagar-608 002
Dated : 25.02.2000

The Entrance Examinations for admission to B.E./B E. (Chem)/B.Sc (Ag.) and B.Sc (Hort.) Courses of the Annamalai University for the year 2000-2001 are scheduled to be conducted by the University.

Appearing in the Entrance Examinations is COMPULSORY FOR CANDIDATES seeking admission to these courses.

These Entrance Examinations are for the candidates of TAMIL NADU and for those who satisfy the nativity/domicile requirements specified by the University for admission to these courses.

This Notification relates only to the ENTRANCE EXAMINATIONS. Candidats are advised to refer to separate notification which will be issued around Second Week of May 2000 by the University inviting applications for admission to the various courses.

Selection to various courses will be governed by the procedures laid down by the University.

COURSES OFFERED

ENGINEERING : B.E · Civil/Civil & Structural/Mechanical/Mechanical & Production/Electrical & Electronics/Electronics & Instrumentation/ Computer Science & Engineering/Information Technology and Chemical Engineering.

AGRICULTURE : B.Sc (Agriculture)/B.Sc. (Horticulture)

GENERAL INSTRUCTIONS

Candidates who are appearing for Higher Secondary or Equivalent qualifying examinations during March-May 2000 and Candidates who have already passed HSC or other equivalent qualifying examinations are eligible to apply for these entrance examinations

The Entrance Examinations will be conducted in the following schedule and subjects :**

Paper 1 : Biology (Botany & Zoology) — 03.05.2000 (Forenoon)
Paper 2 · Physical Sciences (Physics & Chemistry) — 02.05.2000 (Forenoon)
Paper 3 · Mathematics — 02 05 2000 (Afternoon)

**Questions for the above examinations will be based only on the syllabi and Text Books prescribed for the Second Year of the Tamil Nadu HSC (Academic) Course.

Candidates who intend to seek admission for the Engineering Courses ONLY should appear for papers 2 & 3 only; Candidates who intend to seek admission for Agriculture or Horticulture Courses ONLY should appear for papers 1 & 2 only; Candidates seeking admission for both Engineering and Agriculture or Horticulture courses should appear for all the Three papers.

Admission will be made on the basis of marks obtained in the relevant subjects in the qualifying examinations (HSC or equivalent) and in the Entrance Examinations, with weightage of marks 200 and 100 respectively.

COST OF APPLICATION FORM

(i) SC/ST Candidates of Tamil Nadu — Rs. 50/-
(ii) For all the others the Cost of Application Form is — Rs. 100/-

The Tamil Nadu SC/ST Candidates desirous of obtaining the application forms at the above concessional rates should submit a certificate obtained from the Head of the Institution last studied/studying in the format given below.

CERTIFICATE

(For use by Tamil Nadu SC/ST Candidates)

This is to certify that Selvan/Selvi ______________ studied/studying in this Institution belongs to Tamil Nadu SC/ST Community and he/she is eligible to write the Annamalai University Professional Courses Entrance Examinations.

Signature of Headmaster/
Headmistress
with date

Name & Address
of Institution

METHOD OF PAYMENT

Application forms can be obtained IN PERSON BY CASH PAYMENT at the University Cash Counter on all working days.
(Holidays : Saturday, Sunday & other Government Holidays)

To get application form by Post the candidate should send a requisition letter along with a Demand Draft for Rs 100/- (except SC/ST candidates) for SC/ST students, they have to send a requisition letter along with a Demand Draft for Rs. 50/- along with a Certificate given by the Institution last studied/studying. The demand draft should be drawn in favour of **"The Registrar, Annamalai University, Annamalainagar-608 002"** obtained on or after 25.02.2000 from **Indian Bank/Bank of Madura/ State Bank of India**, payable at **Annamalainagar or Chidambaram** and a self-addressed kraft envelope of size 35 cm x 15 cm with stamps affixed to the value of Rs. 10/-. **Draft from any other Bank will not be accepted.** Candidates are advised to write their name and address on the reverse of the Demand Draft.

Application forms will be sent only by ORDINARY POST and the University will not be held responsible for non-receipt of application forms.

SCHEDULE

Application form will be issued from — 03.03.2000
Last date for issue and receipt of filled in application form in the University — 03.04.2000

Note : Please quote the reference Number of the above Notification on the top of the request letter without fail.

Dr. M. Rathinasabapathy
REGISTRAR

GURU GOBIND SINGH
INDRAPRASTHA UNIVERSITY
Kashmere Gate, Delhi-110 006

NOTIFICATION FOR ENTRANCE TESTS-2000

The University will hold Common Entrance Tests (CET) for admission to the following Undergraduate and Postgraduate programmes conducted in the University Teaching Departments, Government Institutions and in self-financing (privately managed) institutions **during 14th May to 24th June, 2000 for the session 2000-2001 :**

S. No.		**Programmes**	**Scheduled date of test**
1.	(i)	MBA (Full Time)/Master of Business Studies (E-Commerce, International Marketing & Computer Aided Mgmt.)	14.05.2000
	(ii)	MBA (Part Time)	
2.		Master of Computer Application/ Master of Software Engg.	21.05.2000
3.		Master of Environment Management	21.05.2000
4.	(i)	Master of Technology (Integrated), (a) Information Technology (b) Chemical Technology (c) Bio-Technology	25.05.2000
	(ii)	Bachelor of Technology,	
	(iii)	Bachelor of Architecture	
5.		Bachelor of Computer Application	03.06.2000
6.	(i)	Bachelor of Physiotherapy	10.06.2000
	(ii)	Bachelor of Pharmacy	
7.		LL.B. (Hons)	11.06.2000
8.	(i)	Bachelor of Hotel Management & Catering Technology	17.06.2000
	(ii)	Bachelor of Business Administration (Hons)	
	(iii)	Bachelor of Computer Aided Management	
9.		Bachelor of Education (B.Ed.)	24.06.2000
		Entrance Tests being conducted on behalf of Department of Training & Technical Education, Government of Delhi.	
	(i)	Diploma in Computer Engineering	31.05.2000
	(ii)	Diploma in Pharmacy	13.06.2000
	(iii)	Diploma in Modern Office Practice	13.06.2000
	(iv)	Diploma in Engineering/ Non-Engineering programmes	20.06.2000

The Information Bulletin providing detailed information regarding names of institutions, programmes, intake capacity, eligibility criteria and reservation of seats alongwith details for related aptitude tests if any, will be on sale from University office against payment of prescribed fee for each test as per schedule to be notified separately.

D. Taneja
REGISTRAR (ACAD)

MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF SCIENCE & TECHNOLOGY

Fund for Improvement of S&T infrastructure in Universities and higher educational institutions (FIST)

Department of Science and Technology, Government of India, is launching a new scheme called FIST (Fund for Improvement of S&T infrastructure in universities and higher educational institutions) during the 9th Five Year Plan. This scheme is intended to provide basic infrastructure and enabling facilities for promoting R&D activities in new and emerging areas and attracting fresh talent in universities and other educational institutions.

Nature of Support : The scheme will provide optimal infrastructure facilities such as, adequate laboratory space, cold rooms, modernisation of laboratories, acquisition of essential equipment and up-gradation of existing facilities and ready access to information systems and computational facilities, data bases, scientific journals, etc.

Duration : The duration of support for each department will be for a period not exceeding 5 years.

Eligibility : All Science and Engineering departments in universities and other higher educational institutions are eligible.

Type of support

(a) Level I : Proposals from relatively small but active Departments requiring moderate funding for improving quality of teaching and research through modernisation of laboratories and for augmenting library and networking & computational facilities.

(b) Level II : Proposals from well established departments requiring substantial funding for acquiring state of the art equipment and setting up laboratories conforming to GLP norms for conducting internationally competitive research including networking and computational facilities.

Selection : The selection will be through a peer review mechanism and visit to the laboratories, if necessary. An Advisory Board of Experts will assist the Department in making the final selection.

Application : Applications are invited from eligible departments in the universities and other higher educational institutions in the prescribed format given below. The departments may be required to submit additional information and/or presentation. Application complete in all respects should reach the following address on or before **15th April, 2000.**

Dr. R.C. Srivastava, Scientist 'G', Science and Engineering Research Council (SERC) Division, Department of Science and Technology, Technology Bhawan, New Mehrauli Road, New Delhi-110 016. (Telefax : 011-6963695; E-mail : rchandra@alpha.nic.in; venktesh@alpha.nic.in

A floppy diskette (3.5") with proper labelling should also be attached.

The envelope should mention on top **"PROPOSAL UNDER FIST".**

---**PRESCRIBED FORMAT**---

Application for (please tick (one) ☐ **Level I** ☐ **Level II**

1 a) Name of the University/Institution

b) Name of the Department & year of Establishment

c) Address for correspondence including telephone, telegram, FAX, e-mail etc.

2 Number of Faculty members : i) Professors; ii) Readers; iii) Lecturers

3. Distinction earned by faculty members like National and International Awards, Professional Societies.

4. Student strength at :

(a) PG level — M.Sc. — Regular Students

M.Phil.

(b) Ph.D in each sub-discipline

5. Indicate the development grant received from UGC/AICTE during the Seventh and Eighth Plan.

	Seventh Plan	Eighth Plan
Building		
Equipment		

6. What is the annual grant available to the department from your university/institution during the last two years.

Year	For Research	For Teaching

7. Has the department received any major infrastructural Research grant during the last five years from S&T agencies including UGC/AICTE. If yes, details.

Head	Name of Agency/ Scheme with year and amount
Building	
Equipment	
Books & Journals	
Supplies and materials	
Computing & Networking facilities.	

8. Is the Department recognized under DRS (Department Research Support), DSA (Departmental Special Assistance), (CAS) Centre for Advanced Study and COSIST Schemes of UGC for receiving support. Please (tick) one DRS DSA CAS COSIST

9. Details of research grant received from different agencies during the last five years :

Name of the Investigator	Title of the project	Amount sanctioned	Funding Agency

10. Indicate the research activities of the faculty members as per the following proforma.

Name and designation of Faculty	Major areas of Research	Number of Ph.Ds. Produced (in last 5 yrs.)

11. List of research publications, including patents, coming out of your department during the last five years in the refereed journals.

12. Give a list of equipments which are available and functional in the department costing Rs. 5 lakhs and above.

Name of Equipment	Year of Purchase	Status

13. Library facility : List the journals received in your department/university library in the concerned discipline.

14. Details of computing and networking facilities available in your department and institution.

15. Details of facilities in central instrumentation centres such as RSIC, USIC etc., if any.

16. Details of Research profile/plans of the Deptt. for the next 5 years.

17. Details of funds requested for 5 years along with phasing for each year.

Cost in Rs. (FE component in US$)

S. No.	Items Name	1st yrs.	2nd yr.....5th Yr.	Total
A.	Equipment			
B.	Infrastructure facilities			
C.	Networking computational facilities etc.			
D.	Maintenance of equipment			
	Total			

18. Justification for each item given at serial No. 17.
Information submitted as above is true and correct.

Signature of the Head of the Department	Signature of the Head of the Institution

This advertisement is also available on the Internet at : http://www.nic.in/snt/news.htm

davp 99/781

JUST RELEASED

UNIVERSITIES HANDBOOK - 28th Edition

Pages xx + 1112 **Size $8^{1}/_{2}$ x $11^{1}/_{2}$** **Price Rs. 3000.00**

Salient Features

Contains information covering all the 248 Indian Universities including agricultural universities, institutes of national importance (including IITs) and deemed to be universities on following heads of information :

- Officers & Deans of Faculties;
- Library & Research Facilities;
- Scholarship and Fellowships;
- Fees and Hostel Facilities;
- Academic year — last date for admissions and the approximate dates of examinations;
- Courses of Studies;
- Minimum requirements for admission to each course, duration and the subjects of study for each course;
- Names of Professors and Readers/Assistant Professors together with their academic titles department-wise with specialisation;
- Names of Colleges together with names of Principals and Heads of Postgraduate Departments and courses conducted.

Also includes introductory chapter on overview of the University System in India.

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AIU House, 16 Kotla Marg, New Delhi - 110 002
Telephones : 3230059, 3232305, 3232429, 3232435, 3233390
Fax 011-3232131 E-mail aiu@del2.vsnl.net.in
Website : http://www.aiuweb.org

CLASSIFIED ADVERTISEMENTS

JAMIA MILLIA ISLAMIA

NEW DELHI-110 025

Advt.No. 02/1999-2000/Rectt.II
dated 29.02.2000

Applications on the prescribed forms are invited for the post of **Controller of Exams.** in the Scale of Rs. 16400-22400 alongwith a self addressed and stamped envelope worth Rs. 5/- (ordinary post) and Rs 18/- (Registered post) The application shall be accompanied with a crossed IPO/demand draft of Rs 50/- (Rs. 20/- for SC/ST) in favour of Jamia Millia Islamia. The application should reach the Asstt Registrar (Recruitment-II), latest by **10.4.2000** by hand/mail The qualifications for the post as prescribed by the MHRD/UGC shall be supplied along with the application form. The appointment shall be for a tenure of five years which can be renewed for similar terms or upto 62 years of age whichever is earlier

Prof. Anisur Rahman
Dated : 29.2.2000 **OFFG. REGISTRAR**

WATUMULL INSTITUTE OF ELECTRONIC ENGINEERING & COMPUTER TECHNOLOGY

47, R.G. THADANI MARG, WORLI, MUMBAI-400 018. PH. : 4935281

(MANAGED BY HYDERABAD (SIND) NATIONAL COLLEGIATE BOARD, MUMBAI-400 020)

(Affiliated to the University of Mumbai and approved by All India Council for Technical Education and State Government under Grant-in-aid/POSTS ARE PENSIONABLE WITH BENEFIT OF GRATUITY)

The Institute offers 3 years degree course leading to B Sc (Tech) degree of the University of Mumbai in the following branches

(A) ELECTRONIC ENGINEERING INCLUDING INDUSTRIAL ELECTRONICS

(B) COMPUTER TECHNOLOGY (HARDWARE AND SOFTWARE)

(C) ELECTRONIC INSTRUMENTATION INCLUDING BIOMEDICAL INSTRUMENTATION

Applications are invited for the following faculty positions :

PROFESSOR

Broad area of Specialisation (with basic degree in Engg/Tech.) A — 1, B — 1, C — 1

Qualifications : As prescribed by Univ. of Mumbai from time to time.

Pay Scale & allowances : As prescribed by Univ. of Mumbai from time to time.

ASSISTANT PROFESSOR

Broad area of Specialisation (with basic degree in Engg/Tech.) A — 1, B — 3, C — 2

Qualifications : As prescribed by Univ. of Mumbai from time to time

Pay Scale & allowances : As prescribed by Univ. of Mumbai from time to time.

LECTURER

Broad area of Specialisation (with basic degree in Engg./Tech.) A-3, B-3, C-2.

Qualifications : As prescribed by Univ. of Mumbai from time to time.

Pay Scale & allowances : As prescribed by Univ of Mumbai from time to time.

TRAINING & PLACEMENT OFFICER

Broad area of Specialisation 1st Class degree in any of the above areas of specialisation.

Qualifications : As prescribed by Univ of Mumbai from time to time.

Pay Scale & allowances : As prescribed by Univ of Mumbai from time to time

Reservations for women will be as per the directions of the Vice-Chancellor, vide circular No. BCC/16/74/1998 dated 10.3.1998.

Implementation of revised pay-scales for teachers in technical institute as per AICTE recommendation is imminent.

Applicants, who are already employed shall send their applications through proper channel. Applicants shall account for breaks, if any, in their academic career Applications, giving complete bio-data along with xerox copies of certificates and testimonials should reach The Rector & Secretary, Hyderabad (Sind) National Collegiate Board, K.C. College, Churchgate, Mumbai-400 020, **within 20 days** from the date of publication of this advertisement.

THOSE, WHO APPLIED IN RESPONSE TO THE ADVERTISEMENT DATED 20.07.1998 AND 16.08.1999, NEED NOT APPLY AGAIN.

WOMEN'S EDUCATION SOCIETY'S

SMT. MATHUBAI GARWARE KANYA MAHAVIDYALAYA

SANGLI

C.S. No. 298 & 1317-A, S.T. Stand Road, Khanbhag, Sangli-416 416

(Affiliated to Shivaji University, Kolhapur)

Wanted

Applications are invited for the following post to be filled in the Sr. College from June 2000.

1. **Librarian — Open**

Minimum Qualification

1. Qualifying in the National level test conducted by the U.G.C. for, Librarian or any other agency approved by the U.G.C.
2. Master's degree in Library Science/Information Science/Documentation or an equivalent professional degree with at least 55% of the marks or its equivalent grade of B in the UGC seven point scale.
3. Consistently good academic record with the knowledge of computerisation of library.

Apply giving full particulars **within a month** from the date of publication of this advertisement to the undersigned. The prescribed form will be available from the College Office on payment of Rs. 10/- during the office hours in Cash or I.P.O

4. Those who are already in service should apply through proper channel.
5. Incomplete applications will not be considered.

P.J. Tambankar
SECRETARY **PRINCIPAL**

GURU NANAK DEV UNIVERSITY

AMRITSAR

Advertisement No. 1/2000

Applications are invited for the following posts on the prescribed form so as to reach this office latest by **31-3-2000.** The application blank may be obtained either personally from the Cashier, Guru Nanak Dev University, Amritsar on payment of Rs.150/- for posts at Sr. Nos. 1 to 14 and Rs.100/- for others at the counter or from the Deputy Registrar (General) by making a written request accompanied by a self-addressed stamped (Rs.5/-) envelope of 23x10 cms. and Demand Draft for Rs.150/- for posts at Sr. Nos. 1 to 14 and Rs.100/- for others in favour of the "Registrar, Guru Nanak Dev University" payable at Amritsar.

A. Teaching posts

1. **Professors** (Grade Rs.16400-22400) :

Chemistry (Inorganic, Organic, Physical, Analytical and Industrial) — Two

Biotechnology (Genetic Engineering/Enzyme Technology/Plant Tissue Culture/Immunobiotechnology or any other area of modern biotechnology/Life Sciences) — One

Pharmaceutical Sciences (Chemistry/Pharmaceutical Chemistry/Medicinal Chemistry) — One

Food Science & Technology (Food Technology/Engineering) — One

Applied Physics (Material Science) — One

Mathematics (Any branch of Mathematics) — One

Computer Science & Engineering (Distributed Process, Advanced Computer Architecture, Simulation, Computer Graphics, Software Engineering, Theoretical Computer Science and any other area of modern computer science and engg.) — One

Sports Medicine & Physiotherapy — One

Human Genetics (Human Biochemical Genetics/Human Molecular Population Genetics) — One

2. **Readers** (Grade Rs.12000-18300) :

Chemistry (Inorganic, Organic, Physical, Analytical and Industrial) — Two

Pharmaceutical Sciences (Pharmaceutics/Pharmaceutical Chemistry/Pharmacology) — Two

Zoology (Any modern field of Zoology) — One

Human Genetics (Human Cytogenetics/Genetic Toxicology) — One

Hindi — One

3. **Lecturers** (Grade Rs.8000-13500) :

Chemistry (Inorganic Photochemistry, Organometallics, Bio-organic Chemistry, Bio-Inorganic Chemistry, Biophysical Chemistry, Spectroscopy, NMR Spectroscopy, Chemistry of Materials, Combinatorial Chemistry, Chemical Engineering, Reaction Kinetics, Quantum Chemistry, Solution Chemistry, Chromatographic Methods of Analysis, Electroanalytical Chemistry, Electrochemistry, Environmental Chemistry, Analytical Chemistry, Industrial Chemistry) — Six

Biotechnology (Immunology/Microbial Technology/Plant Tissue Culture) — Two

Pharmaceutical Sciences (Pharmaceutical Chemistry/Pharmacology/Pharmacognosy/Medicinal Chemistry) — Three

Academic Staff College — One

Physical Education — One (leave vacancy)

Sports Medicine & Physiotherapy (Sports Physiotherapy) — Two (one post is upto 31/3/2002)

Applied Chemical Sciences & Technology (Textile Chemistry/Textile Engineering/Textile Technology) — One

Human Genetics (Human Biochemical Genetics/Human Molecular Genetics/Human Anatomy, Physiology and Embryology/Human Population Genetics/Human Evolution/Any Modern area related to Human Genetics) — Three

4. **Assistant** Geneticist/Senior Scientific Officer (Research Project "Indo-FRG Co-operation in the field of Human Genome Research and Medical Genetics") Centre for Genetic Disorders — One (Grade Rs.8000-13500)

5. **Assistant** Biochemical Geneticist/Senior Scientific Officer (Centre for Genetic Disorders) — One (Grade Rs.8000-13500)

6. **Research Associate** (Rs. 8000/-pm fixed) :

Microbiology — One

School of Punjabi Studies — One

Hindi — One

7. **Research Fellows** (Rs. 5000/-pm fixed) :

Electronics Technology — Two

School of Punjabi Studies — Four

Hindi — One

Sanskrit — One

Applied Physics (Res. Project 'Development of Hexagonal Ferrite Compostes for X-Band Microwave') — One

Textile Chemistry — Two

Chemistry — Five

8. **Research** Fellow-cum-Demonstrator (Zoology Deptt.) — One (Rs. 5000/- pm fixed)

Regional Campus, Gurdaspur

9. **Professors** (Grade Rs.16400-22400) :

Business Management (Accounting/Finance/Marketing/Personnel Management & Industrial Relations) — One

Law — One

10. **Readers**(Grade Rs 12000-18300)

Business Management (Accounting/Finance/Marketing/Personnel Management & Industrial Relations) — Two

11 **Lecturers** (Grade Rs.8000-13500) :

Business Management — Three

Law — Three

(a) MA (English/Punjabi/Political Science/Economics/History) : Essential qualifications

(b) LL.M. : Essential qualifications

(c) UGC N.E.T. in Law : Essential qualifications

B. Non-teaching posts

12. **Librarian** — One

(Grade Rs.16400-22400)

13. **Programmers** — Three

(Grade Rs.8000-13500)

14. **Security Officer** — One

(Grade :Retd. Lieut Col/Col.-Rs.10025-15100+250/-CA

Retd. Major-Rs. 7220-11660+250 CA

Normal Grade-Rs. 7220-11660+250 CA

15. **Senior Technicians** (Grade Rs.5800-9200)

Centre for Genetic Disorders — One

Electronics (Chemistry Deptt.) — One

16. **Professional Assistant** (Bhai Gurdas Library) — One

(Grade Rs.5480-8925)

17. **Technicians** (Grade Rs.5000-8100) :

Store (Botanical Sciences Dept..) — One

Pharmaceutical Sciences Deptt. — Two (one reserved four SC)

18. **Data Entry Operator** (Computer Centre) — One

(Grade Rs.5000-8100)

19. **Clerk-cum-Junior Data Entry Operator** (Website) — One

(Grade Rs.3120-5160)

20. **Junior Technicians** (Grade Rs.3120-5160)

Computer Science & Engg. Deptt. — One

Physics — One

21. **Copy Holder** — One (reserved for SC/ST)

(Grade Rs.3120-5160)

22. **Painter Grade-II** — One

(Grade Rs.3120-5160)

23 **Mason Grade-II** — One

(Grade Rs.3120-5160)

24. **Attendants** (Grade Rs.3120-5160) :

Computer Science & Engg. Deptt. — One

Computer Centre — One

25. **Electrician Grade-II** — Two (One reserved for SC/ST)

(Grade Rs.3120-5160)

Note: Copy of circular containing detailed instructions, qualification, etc. for the posts will be supplied alongwith the application form.

Amritsar
March 2,2000 **REGISTRAR**

NIRMALA INSTITUTE OF EDUCATION

ALTINHO, PANAJI, GOA-403 001

Applications are invited from qualified candidates for the posts of Lecturers for the following Special Methods :

Science (1)

Mathematics (1)

Candidates should have good academic record with at least 55% marks or an equivalent grade at the M.Ed degree from an Indian University or any equivalent degree from a Foreign University. Candidates besides fulfilling the above qualifications should have cleared the eligibility test for Lecturers conducted by the UGC, CSIR or similar test accredited by the UGC. In case candidates having passed eligibility test are not available, candidates fulfilling other conditions would be appointed on temporary basis.

Pay Scale : Rs. 8000-275-13500

Candidates should apply to The Principal, Nirmala Institute of Education, Altinho, Panaji, Goa within fifteen days from the date of publication of this Advertisement.

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

Notice for Admission to Ph D, M Tech and M Sc (2 Years) Programmes

Applications are invited from Indian citizens for admission for the session commencing from July 2000 in the following programmes :

Ph D AND M TECH (ENGINEERING) : Aerospace • Chemical • Civil • Computer Science & Engg • Electrical • Industrial and Management Engineering • Materials & Metallurgical • Materials Science • Mechanical • Nuclear Engineering & Technology

Ph D (SCIENCES) : Chemistry • Mathematics • Physics • Statistics

Ph D (HUMANITIES & SOCIAL SCIENCES) : Economics, English (Literature and Linguistics) • Philosophy • Psychology • Sociology

M TECH (PROGRAMMES) : Environmental Engg & Management • Laser Technology

M Sc (2 Years) PROGRAMMES : Chemistry • Physics • Mathematics • Statistics

Minimum Qualifications :

For Ph D : An M Tech/ME in the respective or allied area. Applicants with BE / B Tech who possess a valid GATE Score may also apply. Candidates for Ph D in Sciences and HSS must have a valid GATE / UGC / CSIR score.

For M Tech : A BE/B Tech in Engg or an M Sc and A valid GATE Score.

For M Sc : A Bachelor's degree (or its equivalent as recognised by the Institute) with at least 55% of aggregate marks in Chemistry, Mathematics and Statistics and 60% in Physics.

GENERAL INFORMATION : Financial aid in the form of teaching/research assistantships is available. • 50 percent tuition fee waiver for Ph D/M Tech students on Assistantship. Additional 25 percent tuition waiver for Ph D students on case to case basis. • 50 percent tuition fee waiver for M Sc (2 years) students. • Reservation : 15% for SC and 7.5% for ST in each programme. • Sponsored and part-time candidates are also considered for M Tech and Ph D Programmes. Sponsored candidates do not require GATE qualification. • Attractive scholarship Schemes from DAE, Infosys, Verifone, Neomagic, Cadence, Analog Devices India, Arcus Technology, Wipro, Novell, Motorola are also available.

HOW TO APPLY :

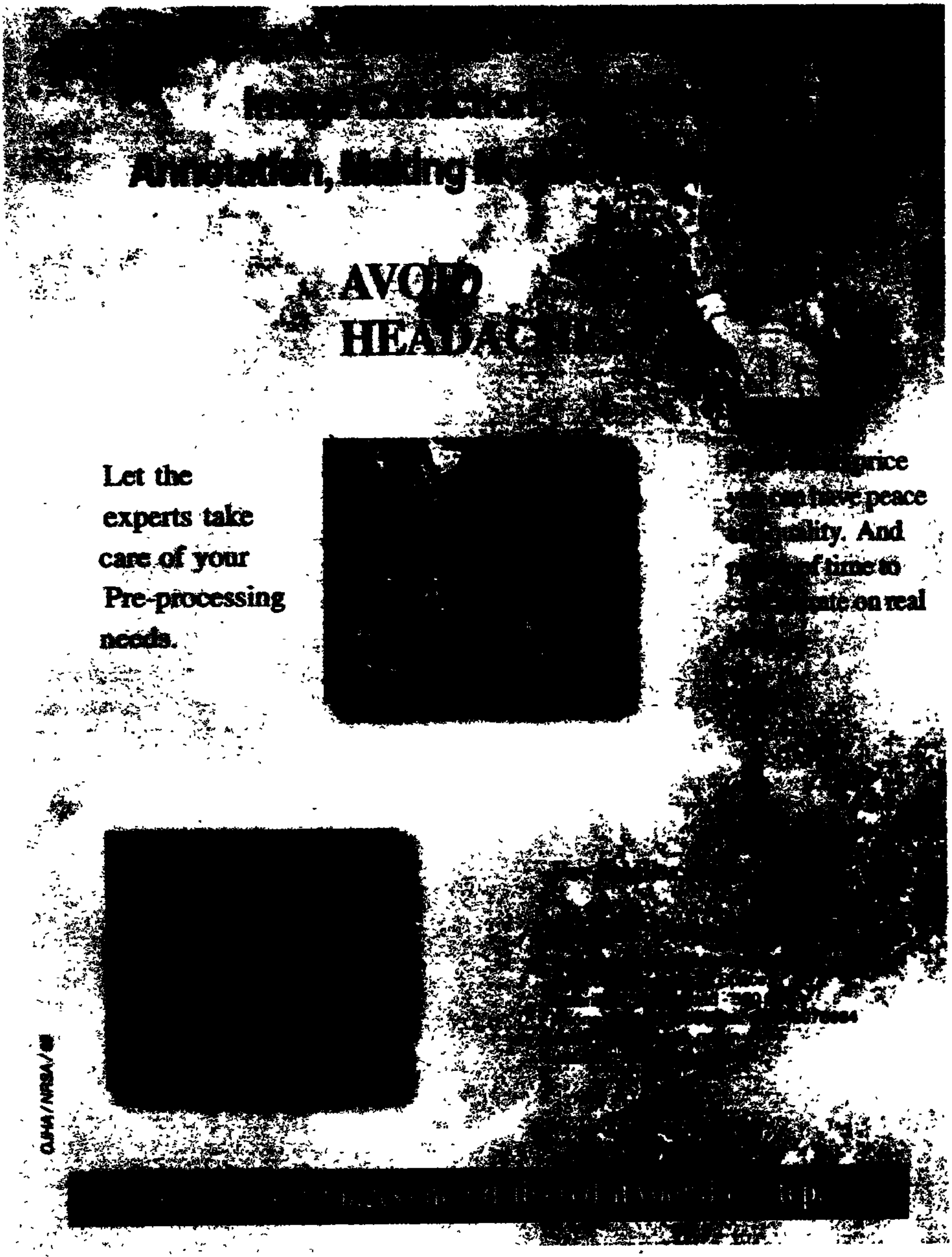
Application forms and detailed information can be had, free of charge, from the ***Assistant Registrar (Academic), IIT Kanpur 208016,*** personally or by sending the request for the same along with a self-addressed stamped ***(For Rs. 15 for M Tech/Ph D and Rs.6/- for M Sc) strong cloth-lined envelope of 23 CM X 17 CM.***

Separate application must be sent for each programme of study.

You are welcome to visit our website:www.iitk.ac.in/doaa/admissions.html for detailed information concerning admissions and application forms and download the same.

Last date for postal requests for application forms and Information Brochure is April 10, 2000. Forms can also be obtained personally from the Academic Section upto April 14, 2000.

**LAST DATE FOR RECEIPT OF COMPLETED APPLICATION FORM :
APRIL 17, 2000.**



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